THE JOURNAL OF
POLITICAL ECONOMY

Volume 47 APRIL 1939 *Number 2*

HENRY SCHULTZ: HIS CONTRIBUTIONS TO ECONOMICS AND STATISTICS[1]

THEODORE O. YNTEMA
University of Chicago

IN JANUARY, 1937, Henry Schultz delivered a public lecture before the Division of the Social Sciences of the University of Chicago on "The Quantitative Method with Special Reference to Economic Inquiry." The concluding section of that lecture he considered significant, for he later reproduced it in full in an abstract published in the *Report* of the Cowles Commission Research Conference.

Although a theory of dynamic economics is still a thing of the future, we must not be satisfied with the *status quo* in statistical research. Many of the statistical researches that are carried on in the social sciences lack the inspiration of any theory—static or dynamic. Relatively few of us like to perform the necessary *mental experiments* which should precede the assembling and the manipulating of the data, if the results are to be significant. Relatively few of us pause to ask ourselves, *before embarking on the investigation:* What are we trying to prove or disprove? What propositions will have to be established for proving or disproving our thesis? Can they be derived from the statistics which we propose to collect? If so, by what method of analysis, and to what degree of probability? It is not surprising, therefore, that much of what passes as research in the social sciences is a more or less aimless distribution of questionnaires and a more or less mechanical elaboration of erroneous data through the use of correlation coefficients and other statistical devices. Research is not good simply because it is mathematical or statistical,

[1] A paper read at a meeting in memory of Henry Schultz, held at the University of Chicago, January 30, 1939.

or because it makes use of ingenious machines. Research is good if it is significant, if it is fruitful, if it is consistent with established principles, or if it helps to overthrow erroneous principles.[2]

The fact that Henry Schultz oriented his own research by that philosophy explains in part the abundant fruitfulness of his efforts.

He was a scholar with breadth and depth of learning. An earnest student of the great masters, Laplace, Gauss, Pearson, Cournot, Walras, and Pareto, he made them live again in his own work. He was a conservator of knowledge, consolidating past accomplishments and paving the way for future progress. He was a systematic and painstaking worker, with notes and files carefully organized to preserve his accumulations of data and theory.

His various activities were integral parts of a unified plan. Statistical economics was his major interest, and for this he mastered the methods of mathematical economics and statistics and such pure mathematics as he required. His program for research showed structure: for fifteen years he labored toward the objective of measuring demand and supply functions—building the theoretical framework, perfecting the statistical methods, and extending the scope of his reading and observation. Not once did he turn aside to the irrelevant or immaterial.

By the death of Henry Schultz we lost a friend, a gentleman, an inspiring teacher, and a distinguished scholar. His life was cut short before his intellectual powers had reached their maximum or his years of study had come to full fruition. Providentially, though, we have his book, which preserves for us a broad foundation for the comprehension of problems in his field.

In reviewing Schultz's work it is convenient to consider separately his contributions in statistics, in mathematical economics, and in statistical economics.

In the field of statistics, his publications dealt primarily with curve-fitting, sampling errors, and correlation methods. These were, for the most part, by-products of his major studies in statistical economics.

[2] "Statistics in Economics," *Report of Fourth Annual Research Conference on Economics and Statistics* (Colorado Springs, 1938), p. 84.

In curve-fitting he was concerned with the problem of finding the most probable function when more than one variable is subject to error. He brought together widely scattered references on this topic, made the procedures available in convenient form for other students, and demonstrated their significance in the determination of demand curves.[3]

In discussions of sampling errors Schultz drew heavily on the classical literature of least squares and helped place some of the recent work in its proper historical setting. His original contribution consisted in deriving the standard error of the function for several curves commonly used as time-series trends.[4]

"Elements of Curve-fitting and Correlation," which appears as Appendix C in *The Theory and Measurement of Demand*, is an elegant statement of correlation theory and practice. Because of its value to advanced students and research workers, this appendix was reprinted and is available as a separate monograph.

His last article appeared posthumously in the current issue of *Econometrica*, "A Misunderstanding in Index Theory: The True Konüs Condition on Cost-of-Living Index Numbers and Its Limitations."[5]

But Schultz's greatest contribution in statistics lay in his graduate teaching and in his training of assistants. Qualified by his instruction and stimulated by contact with real research, several of his students have already published excellent papers in theoretical and applied statistics.

The separation of Schultz's work in mathematical economics from that in statistical economics is rather arbitrary since they were often so closely related, the former serving as a basis for the latter.

In the mathematical formulations of economics, Schultz was a disciple of Cournot, Walras, and Pareto. The influence of Walras and Pareto has been and will be much the greater because Schultz understood and disseminated their ideas. From his first article on

[3] *Statistical Laws of Demand and Supply* (Chicago, 1928), pp. 38–40, and *The Theory and Measurement of Demand* (Chicago, 1938), pp. 715–17.

[4] "The Standard Error of a Forecast from a Curve," *Journal of the American Statistical Association*, June, 1930, pp. 139–85.

[5] January, 1939, pp. 1–9.

the "Elasticity of Demand and the Coefficient of Correlation"[6] to his book in 1938[7] he made constant reference to the scholars of Lausanne. Most important of Schultz's own writings in mathematical economics are chapters i and iv in *Statistical Laws of Demand and Supply with Special Application to Sugar*, his article "Marginal Productivity and the General Pricing Process,"[8] and, overshadowing the rest, chapters i, xviii, and xix in *The Theory and Measurement of Demand*.

These chapters in his recent book "give a simple, yet quite adequate, summary of the general theory of utility, exchange and demand and its latest developments—something not to be found in existing treatises." They also "present the modern theory of demand for completing and competing goods" and "develop a measure of the extent to which human behavior in the market place is rational or consistent."[9] These are Schultz's own words. We should add that these chapters are not only unique in scope but that they are also distinguished for elegance of presentation and critical discrimination. Without question they constitute the best discussion of demand extant—one that will long be classic.

Statistics and mathematical economics were, however, merely contributory to Schultz's main objectives in statistical economics. Henry Ludwell Moore, to whom *The Theory and Measurement of Demand* is dedicated, was the initial source of Schultz's inspiration in this undertaking. Although Schultz's own explorations surpassed Moore's in theoretical significance and quantitative accuracy, he never lost his reverence for his teacher's pioneer accomplishments.

Economic theory is a structure composed of inequalities, in which deduction is based on the signs of the first and second derivatives of various functions descriptive of utility, demand, and supply. We do not know the mathematical forms of these functions or their parameters. To the determination of approximations to these functions Schultz directed his efforts.

For the last hundred years such inductive investigation was

[6] *Quarterly Journal of Economics*, November, 1923, pp. 169–71.

[7] *The Theory and Measurement of Demand*.

[8] *Journal of Political Economy*, October, 1929, pp. 505–51.

[9] *The Theory and Measurement of Demand*, p. x.

urged repeatedly by Cournot, Jevons, Marshall, and Pareto, but almost never was it seriously attempted. As Schultz said: "The history of the statistical study of demand is essentially a recital of neglected opportunities crowned by a few belated and partial successes."[10]

Although there had been a few sporadic attempts earlier, it was not until 1914 that the first definitive and systematic attack on the problem of deriving demand curves was completed. In that year Henry Ludwell Moore published his *Economic Cycles: Their Law and Cause* containing equations expressing the relation between quantity and price for each of several agricultural products and, derived from these equations, elasticities of demand for each crop. This work has served as a point of departure for practically all the demand studies which have subsequently been made.

Since 1925, when his first major article, "The Statistical Law of Demand as Illustrated by the Demand for Sugar," appeared in the *Journal of Political Economy*,[11] Schultz was the leader in this field, increasing his eminence with each successive publication. It is not necessary, however, to review his individual articles, since practically all of them are integrated in his two books, *Statistical Laws of Demand and Supply with Special Application to Sugar* and *The Theory and Measurement of Demand*. The first of these is devoted to the determination of the demand and supply functions and elasticities for sugar, with special attention to the logical basis for procedure and with an illustrative application to the tariff. *The Theory and Measurement of Demand* is the product of a ten-year program of statistical research. In my opinion the book is great primarily because of its theoretical and procedural contributions; but the statistical chapters are also monumental achievements, dwarfing previous studies in the field. I cannot better indicate the scope of the book than by borrowing the author's words.

> The present work is the first systematic treatise on the subject. It begins with a résumé of the modern mathematical theory of demand and then proceeds to summarize, compare, and evaluate the various methods and procedures that have been suggested for deriving demand curves from statistics

[10] *Ibid.*, p. 657.

[11] October, 1925, pp. 481–504; and December, 1925, pp. 577–637.

(Part I). Finally, it utilizes some of these methods and procedures in deriving the American demand functions for sugar, corn, cotton, hay, wheat, potatoes, oats, barley, rye, buckwheat, and for beef, pork, and mutton; and the Canadian demand functions for sugar, tea, and coffee (Parts II and III). An important feature of this work is the comparison of the elasticities of demand and the rates of shift of the demand curves of the various commodities obtained by the different methods.

The keystone of this treatise is the "Law of Rational Consumer Behaviour" . . . . [which] frees the statistical study of demand from much of its former empiricism and gives it greater significance and utility.[12]

Great as were his statistical labors, Schultz confined them to a limited group of commodities. Consequently, more interest attaches to his methods than to his quantitative results. To study the correlation between price and quantity series Schultz, like Moore, employed the methods of link relatives, ratios to trend, and time regression, i.e., multiple correlation, with time as one of the independent variables. From all three methods he obtained fairly consistent results, although the link-relative findings showed slightly erratic behavior. Of the three procedures, he gave greatest attention and emphasis to that of multiple correlation.

In the process of fitting the demand curve to the data, the assumption regarding the relative magnitude of the errors in the respective variables affects the results significantly. This Schultz discovered and emphasized. In his early work on the demand for sugar he applied the method of least squares on the assumption that both quantity and price were subject to error, but in his later investigations presented in *The Theory and Measurement of Demand* he abandoned this more complicated procedure. Instead, he assumed first that price alone was subject to error and then that quantity alone was subject to error and determined the demand function separately on the basis of each of these assumptions. Preferring the former because the consumption data were less reliable than the price data, he based his inferences concerning demand functions, elasticities, and errors of sampling on equations in which quantity was the dependent variable subject to error and price an independent variable not subject to error. This procedure, however, neglects the fact that "errors" arise because of shifts in the demand function not removed by deflation or time

[12] *The Theory and Measurement of Demand*, p. 659.

adjustments, as well as because of imperfections in the measurements. A full consideration of this matter would lead to some upward revision in the most probable values of the elasticities.

Schultz made extensive experiments to compare the results based on adjusted data with those based on the unadjusted figures. His adjustments involved dividing consumption by population and price by the Bureau of Labor Statistics Index of Wholesale Prices. In passing, he recognized the possible imperfection of such deflation, but he did not stop to investigate the matter. Had he done so, he might have found the explanation for the perplexing negative partial correlation between sugar consumption and business activity,[13] but his statistical findings probably would not have been much improved by a more elaborate deflation technique.

It is curious, however, that the problem did not greatly interest him, because it is so fundamentally related to income elasticities and to other changes in buying behavior at different stages of the cycle and especially because demand studies cannot be extended far into the field of nonagricultural commodities without refinement in the deflation process. Schultz's researches were restricted to commodities characterized by relatively stable demand and, in most cases, by relatively widely fluctuating supply. The commodities possessing these characteristics are almost exclusively farm products. If industrial commodities with less erratic fluctuations in supply are to be studied, a more precise method of adjusting or deflating to compensate for shifts in the demand function will be necessary.

The finest memorial to Henry Schultz will be the continuation of his program for research in demand and supply. That program should include not only the new fields for study mapped out in the chapter "Retrospect and Prospect" in *The Theory and Measurement of Demand* but also the methodological problems of curve-fitting and deflation.

Schultz undertook to bridge the gap between factless theory and theoryless fact. He sought to integrate economic theory, which runs only in terms of inequalities, with the statistics of market price and quantity, and from these latter to discover the

[13] *Ibid.*, pp. 220–21.

functions without which we can predict only the sign, but never the magnitude, of the effect resulting from a disturbance to an economic system. In that work he was notably successful. Future analysis may lead to some revision of his quantitative findings, but Schultz has established beyond question the approximate values of important economic parameters.

It is difficult for one who has not read *The Theory and Measurement of Demand* to appreciate the magnitude of the author's achievement in the accumulation, organization, and exposition of so vast a fund of knowledge. For fifteen years Schultz labored to gather material for his *magnum opus*, drawing together from economic theory, mathematics, and statistics all that provided the framework for his hypotheses or the means for their verification. Thus he created a classic which will take its place with the works of Cournot, Walras, and Pareto whom he so revered.

His was the creed of the scientist. The book ends with a quotation from Aristotle:

> The search for truth is in one way hard and in another easy, for it is evident that no one can master it fully or miss it wholly. But each adds a little to our knowledge of Nature, and from all the facts assembled there arises a certain grandeur.[14]

BIBLIOGRAPHY OF HENRY SCHULTZ

1923. "Elasticity of Demand and the Coefficient of Correlation," *Quarterly Journal of Economics*, XXXVIII (November, 1923), 169–71.

1924. "The Statistical Measurement of the Elasticity of Demand for Beef," *Journal of Farm Economics*, VI, No. 3 (July, 1924), 254–78.

1925. "An Extension of the Method of Moments," *Journal of the American Statistical Association*, XX, No. 149 (June, 1925), 242–44.

"The Statistical Law of Demand as Illustrated by the Demand for Sugar," *Journal of Political Economy*, XXXIII, No. 5 (October, 1925), 481–504, and No. 6 (December, 1925), 577–637.

1927. "Cost of Production, Supply and Demand, and the Tariff," *Journal of Farm Economics*, IX, No. 2 (April, 1927), 192–209.

Review of H. A. Wallace and G. W. Snedecor, *Correlation and Machine Calculation* in *Journal of Political Economy*, XXXV, No. 2 (April, 1927), 309–11.

"Theoretical Considerations Relating to Supply," *Journal of Political Economy*, XXXV, No. 4 (August, 1927), 437–64.

"Mathematical Economics and the Quantitative Method," *Journal of Political Economy*, XXXV, No. 5 (October, 1927), 702–6.

[14] *Ibid.*, p. 666.

1928. Review of Dorothy S. Thomas, *Social Aspects of the Business Cycle* in *Political Science Quarterly*, XLIII, No. 2 (June, 1928), 294–96.
Review of Robert Wilbur Burgess, *Introduction to the Mathematics of Statistics* in *Journal of the American Statistical Association*, XXIII (June, 1928), 215–16.
Statistical Laws of Demand and Supply with Special Application to Sugar. Chicago: University of Chicago Press, 1928.
Review of Carl Snyder, *Business Cycles and Business Measurements* in *Journal of Political Economy*, XXXVI, No. 5 (October, 1928), 637–39.
Review of G. H. Bousquet, *Vilfredo Pareto: sa vie et son œuvre* in *Journal of Political Economy*, XXXVI, No. 6 (December, 1928), 740–42.
"Rational Economics," *American Economic Review*, XVIII, No. 4 (December, 1928), 643–48.

1929. Discussion of Holbrook Working and Harold Hotelling, "Applications of the Theory of Error to the Interpretation of Trends" in *Journal of the American Statistical Association*, XXIV, No. 165*A* (March, 1929), 86–90.
"Marginal Productivity and the General Pricing Process," *Journal of Political Economy*, XXXVII, No. 5 (October, 1929), 505–51.

1930. "The Standard Error of a Forecast from a Curve," *Journal of the American Statistical Association*, XXV, No. 170 (June, 1930), 139–85.
Der Sinn der statistischen Nachfragekurven, ed. Eugen Altschul. ("Veröffentlichungen der Frankfurter Gesellschaft für Konjunkturforschung," Heft 10.) Bonn, 1930. [An English translation of this, entitled *The Meaning of Statistical Demand Curves*, was planographed and distributed privately.]

1931. "Henry L. Moore's Contribution to the Statistical Law of Demand," *Methods in Social Science* (Chicago, 1931), pp. 644–61.
"The Italian School of Mathematical Economics," *Journal of Political Economy*, XXXIX, No. 1 (February, 1931), 76–85.
Discussion of G. C. Evans, "A Simple Theory of Economic Crises," in *Journal of the American Statistical Association*, XXVI, No. 173*A* (March, 1931), 68–72.
Review of G. C. Evans, *Mathematical Introduction to Economcis* in *Journal of the American Statistical Association*, XXVI, No. 176 (December, 1931), 484–91.

1932. "Hohe Korrelationskoeffizienten und ihre Bedeutung für das Studium der Nachfragekurven," *Allgemeines statistisches Archiv* (München), XXII, Heft 2 (1932), 293–98.
"The Shifting Demand for Selected Agricultural Commodities, 1875–1929," *Journal of Farm Economics*, XIV, No. 2 (April, 1932), 201–27.
Review of Otto Weinberger, *Mathematische Volkswirtschaftslehre* in *Journal of Political Economy*, XL, No. 3 (June, 1932), 422–24.
"Marginal Productivity and the Lausanne School: A Reply [to J. R. Hicks]," *Economica*, XII, No. 37 (August, 1932), 285–96.

1933. Review of Jakob Marschak, *Elastizität der Nachfrage* in *Weltwirtschaftliches Archiv*, XXXVII, Heft 1 (1933), 28–38.

"Frisch on the Measurement of Utility," *Journal of Political Economy*, XLI, No. 1 (February, 1933), 95–116.

"The Standard Error of the Coefficient of Elasticity of Demand," *Journal of the American Statistical Association*, XXVIII, No. 181 (March, 1933), 64–69.

"A Comparison of Elasticities of Demand Obtained by Different Methods," *Econometrica*, I, No. 3 (July, 1933), 274–308.

"Interrelations of Demand," *Journal of Political Economy*, XLI, No. 4 (August, 1933), 468–512.

1934. "Über eine Methode zur Berechnung der Elastizität der Nachfrage und ihre Kritik durch Amoroso," *Zeitschrift für Nationalökonomie*, V, Heft 2 (1934), 216–26.

1935. "Interrelations of Demand, Price, and Income," *Journal of Political Economy*, XLIII, No. 4 (August, 1935), 433–81.

"Correct and Incorrect Methods of Determining the Effectiveness of the Tariff," *Journal of Farm Economics*, XVII, No. 4 (November, 1935), 625–41.

1936. Review of R. G. D. Allen and A. L. Bowley, *Family Expenditure: A Study of Its Variation* in *Journal of the American Statistical Association*, XXXI, No. 195 (September, 1936), 613–17.

Review of Oskar N. Anderson, *Einführung in die mathematische Statistik* in *Journal of Political Economy*, XLIV, No. 5 (October, 1936), 716–18.

Review of A. C. Pigou, *Protective and Preferential Import Duties* in *Journal of Political Economy*, XLIV, No. 5 (October, 1936), 718.

1937. Review of C. J. Ratzlaff, *The Theory of Free Competition* in *Journal of Political Economy*, XLV, No. 2 (April, 1937), 262–65.

Review of Leon Walras, *Etudes d'économie sociale (théorie de la répartition de la richesse sociale)* and *Etudes d'économie politique appliquée (théorie de la production de la richesse sociale)* in *Journal of Political Economy*, XLV, No. 5 (October, 1937), 701–2.

1938. Review of Donald H. Davenport and Frances V. Scott, *An Index to Business Indices* in *Journal of Political Economy*, XLVI, No. 2 (April, 1938), 302.

The Theory and Measurement of Demand. Chicago: University of Chicago Press, 1938.

"Mathematics in Economics," *Report of Fourth Annual Research Conference on Economics and Statistics* (Colorado Springs, Colo.: Cowles Commission for Research in Economics, 1938), pp. 77–79.

"Statistics in Economics," *Report of Fourth Annual Research Conference on Economics and Statistics* (Colorado Springs, Colo.: Cowles Commission for Research in Economics, 1938), pp. 82–84.

"Economic Theory of the Wisconsin Tariff Research Committee: A Reply to Professor W. A. Morton," *Journal of Farm Economics*, XX, No. 4 (November, 1938), 823-30.

1939. "A Misunderstanding in Index-Number Theory: The True Konüs Condition on Cost-of-Living Index Numbers and Its Limitations," *Econometrica*, VII, No. 1 (January, 1939), 1–9.

SPECULATION AND FORWARD EXCHANGE

CHARLES P. KINDLEBERGER
New York City

I

THE attention recently focused upon forward exchange in economic writings, particularly in England, may be said to have been due more to the intricacy of the subject than to its importance. Unlike the forward contract in commodities, which has not as yet been held to have other than technical importance to commodity markets, the forward-exchange contract requires a fair amount of skill at mental gymnastics for its lively discussion—largely because a short position in one currency must sometimes be viewed the other way as a long position in another currency—and has, for this reason, acquired a special literature. It is the purpose of this paper to evaluate that literature in the light of some American banking statistics bearing on it which have not as yet received adequate discussion. Besides calling attention to the statistical material the paper will attempt in conclusion to examine the contention insistently advanced by certain students, that the forward-exchange market can be used by monetary authorities as a costless device for the accomplishment of certain specific ends.

The American statistical material referred to is found in the *Statistics of Capital Movements between the United States and Foreign Countries and Purchases and Sales of Foreign Exchange in the United States*, published by the United States Treasury Department and covering the period since the beginning of 1935.[1] In these publications the short-term foreign assets and liabilities to foreigners of reporting banks and bankers in the United States are set forth, along with security transactions between residents of the United States and foreigners, and these

[1] These data, hereinafter referred to as *Statistics*, were originally published quarterly in Washington, D.C., with a three-month lag. Beginning in January, 1939, they were incorporated in the monthly *Bulletin of the Treasury Department* and are currently presented on a monthly basis, but still with a three-month lag.

foreign assets and liabilities are divided by countries and geographical areas and by types of assets or liabilities, whether deposits, short-term loans, acceptances, bills, etc. According to the usual analysis, it should be remembered, a reduction in the foreign assets or an increase in the short-term liabilities to foreigners of the American banks represents an inflow of short-term capital to the United States, while an increase in foreign assets or a reduction in liabilities to foreigners represents an outflow of short-term banking-funds to abroad.

In addition to these classifications, however, the short-term assets and liabilities are separated by the currencies in which they are denominated, i.e., dollars or foreign currencies. Over and above these short-term or "spot" foreign currency assets and liabilities, the forward-exchange contracts of the banks are also reported, showing how much foreign exchange the banks have contracted to buy and sell in the future.[2] These commitments, together with foreign currency spot assets and liabilities, go to make up the banks' position in foreign exchange, which is, moreover, shown separately.[3] These positions of the banks in foreign exchange are evidently a factor to be followed in the analysis of international movements of short-term capital.

Since the commitments of the banks in forward exchange are divided not only by countries and into contracts to buy and sell exchange, respectively, but into contracts for purchase and sale from and to foreigners and from and to domestic customers, it is possible to make a separation between the forward position of domestic customers of banks in this market and that of all foreigners. The difference between the banks' forward contracts to purchase exchange from domestic customers and their forward contracts to sell exchange to domestic customers represents the forward position of domestic nonbanking customers, since inter-

[2] See *ibid.*, Tables 47–52.

[3] *Ibid.*, Table 53. The stated position of the banks may differ from the positions computed from spot assets, spot liabilities, and the net of forward commitments if the banks report foreign currency assets or liabilities on their books, which they regard as belonging to their customers rather than to their own position. One such item among assets payable in foreign currencies is "Deposits Abroad for Account of Domestic Clients" (*ibid.*, Table 15).

bank contracts, reported by both the purchasing bank and the selling bank, will cancel out. If the banks have sold more exchange forward to their customers than they have bought, these customers will have bought more than they have sold and will be long of foreign exchange in the amount bought forward. The converse, of course, is true if the banks have bought more forward exchange from their customers than they have sold to them. Net outstanding contracts for purchase or sale of forward exchange from foreigners similarly represent the net position of foreigners, including foreign banks, in the forward market of their own currencies and the converse of this position in forward dollars.

As far as foreigners are concerned, however, the forward position of the banking community and others abroad in dollars has little significance by itself compared to their total position in dollars, spot and forward, because it is impossible in the American data to distinguish foreign banks from their customers. The spot liabilities in dollars of American banks are the spot dollar assets largely of the foreign banks, and these may in great part be held as cover for forward sales of dollars to nonbanking institutions and individuals abroad. Thus, if all foreigners are short of dollars in the forward market, this may conceal the fact that customers of banks abroad are long of forward dollars and the banks themselves are short in the forward market by more than this amount, because they hold spot assets over and above the amount of forward dollars they have sold to their customers. For this reason it is uninstructive to measure merely the forward position of foreigners as a group.[4] It is, however, useful to measure the

[4] Since our interest is centered on forward exchange, no statistics are presented of variations in foreigners' total position in dollars. It may be of interest, however, to note this position at the beginning and the end of the period charted below. On January 2, 1935, foreigners owned $536,900,000 in short-term dollar assets (*ibid.*, Report 1, Table 2), but owed American banks $765,300,000 (*ibid.*, Table 17), or were short $228,400,000 of spot exchange. In addition to this, they had sold $397,900,000 in forward dollars (*ibid.*, Table 51), and bought only $112,900,000 forward, leaving them $285,000,000 short forward. Their net position was thus $513,400,000 short. On December 29, 1937, spot claims on American banks amounted to $1,646,600,000 (see corresponding tables in Report 6), spot liabilities to $502,600,000, and their net forward position amounted to $120,100,000 short, giving foreigners a total long position of $1,023,900,000. It should be noted that

forward position of nonbanking domestic customers of reporting American banks.

The forward positions of the domestic customers of American banks do not give a complete or even a satisfactory partial picture of the speculative exchange positions of this group. There are no published figures of the spot foreign currency claims and debts of domestic industrial and commercial concerns and individuals, and these may be expected to vary with the development of conditions of trade, money markets, political conditions, etc. In many cases changes in domestic customers' forward positions will be directly associated with such changes in spot assets and liabilities, while in other cases an American concern can adopt a speculative forward position without buying forward exchange from American banks, by dealing in significant amounts of forward exchange directly with a foreign bank, by borrowing from foreign banks and selling the spot foreign funds received, or even by buying or selling commodities forward in foreign markets.[5] Nevertheless, since the present investigation is more concerned with the forward-exchange than the speculative aspects of the inquiry, it may be defensible to study the forward positions in exchange of their domestic customers, as reported by banks and bankers in the United States.

II

Charts I and II contain several series relating to the exchange markets for the pound sterling, the French franc, and the Dutch

---

among the "spot" dollar assets of American banks, or liabilities of foreigners, are included blocked credits in Germany (see Tables 17–20 incl.) amounting to $230,800,000 on January 2, 1935, and to $125,600,000 on December 29, 1937. These and blocked assets in other countries—e.g., in Latin America—should perhaps be deducted from foreign short-term liabilities to United States payable in dollars.

[5] These last two methods might be used oppositely to take advantage of a wide forward discount on a currency. Thus an American cotton-house, for example, could have shipped cotton to France, borrowed against it and repatriated the proceeds of the loan, and sold the cotton forward. The forward market for cotton would reflect the wide discount on the exchange and sell at a premium over spot, and the proceeds of the forward sale of cotton could be used to pay off the loan. The borrowing and immediate repatriation of the spot francs leaves the American concern short of francs, but his forward sale of cotton, in effect a forward purchase of francs, evens this out.

guilder together with the forward position of the domestic customers of reporting banks in the United States. The reasons underlying the selection of these currencies are that they present certain related and complementary aspects of the topics under discussion, and that, aside from the Canadian dollar, theirs are the only broad forward-exchange markets in New York. In the three years covered by the charts—i.e., from the beginning of the week ended January 2, 1935, to December 29, 1937—total sales of pounds sterling by reporting banks in the United States amounted to $17,186,000,000, total sales of French francs to $2,582,000,000, and total sales of guilders to $941,000,000. Of these totals, moreover, 36, 29, and 40 per cent, respectively, represented the proportion of sales of forward exchange to sales of all exchange, spot and forward.[6]

Chart I contains merely two series on the three currencies: the weekly forward position of their domestic customers as indicated by outstanding forward-exchange contracts of reporting banks and bankers in the United States and weekly averages of daily spot rates of exchange. Chart II presents three series: the first consists of weekly averages of daily three months' forward quotations for the same exchanges; the second, of significant rates of interest in London, Paris, and Amsterdam; the third, of the adjusted movement of short-term banking funds between the United States and England, France and the Netherlands, respectively.[7] All the series are integrated chronologically so that the weekly averages of daily spot and forward rates are for weeks ending Wednesday and the interest rates are as of Wednesdays, which are the reporting dates used by the Treasury Department. The three months' forward-exchange rates are quoted in percentage premiums above or discounts below the spot rate of exchange for a full year, to enable their comparison with rates of interest in appropriate money markets.

[6] See *ibid.*, Report 6, Table F, p. 11.

[7] Computed from *Federal Reserve Bulletin*, May, 1937 (Table 3, pp. 406–7), and April, 1938 (Table 3, p. 269). The French and Dutch series are adjusted to eliminate the effects of the financing of gold shipments according to the procedure described by the writer in *International Short-Term Capital Movements* (New York, 1937), pp. 250–53.

SPOT RATES AND FORWARD POSITIONS

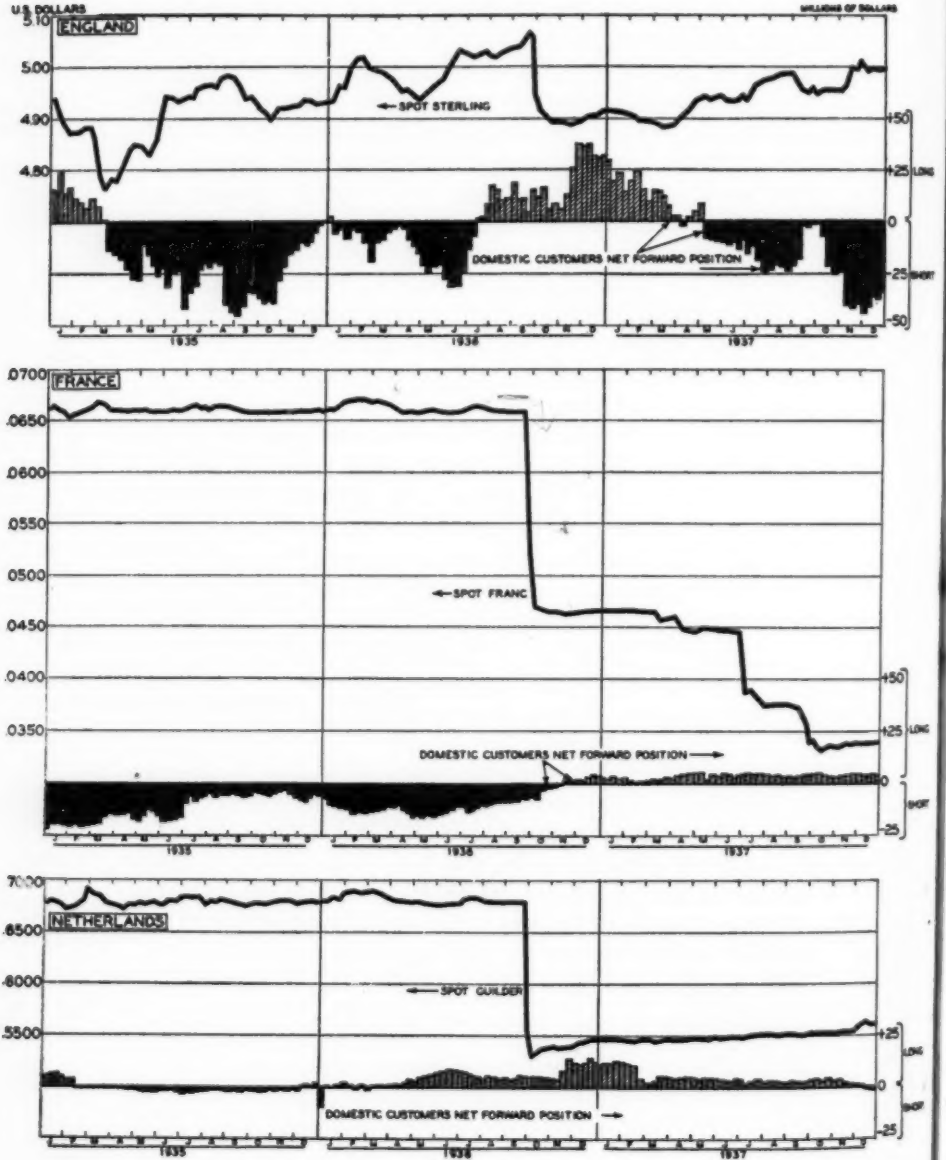

CHART I

INTEREST RATES, FORWARD RATES AND MOVEMENTS OF SHORT TERM BANKING FUNDS

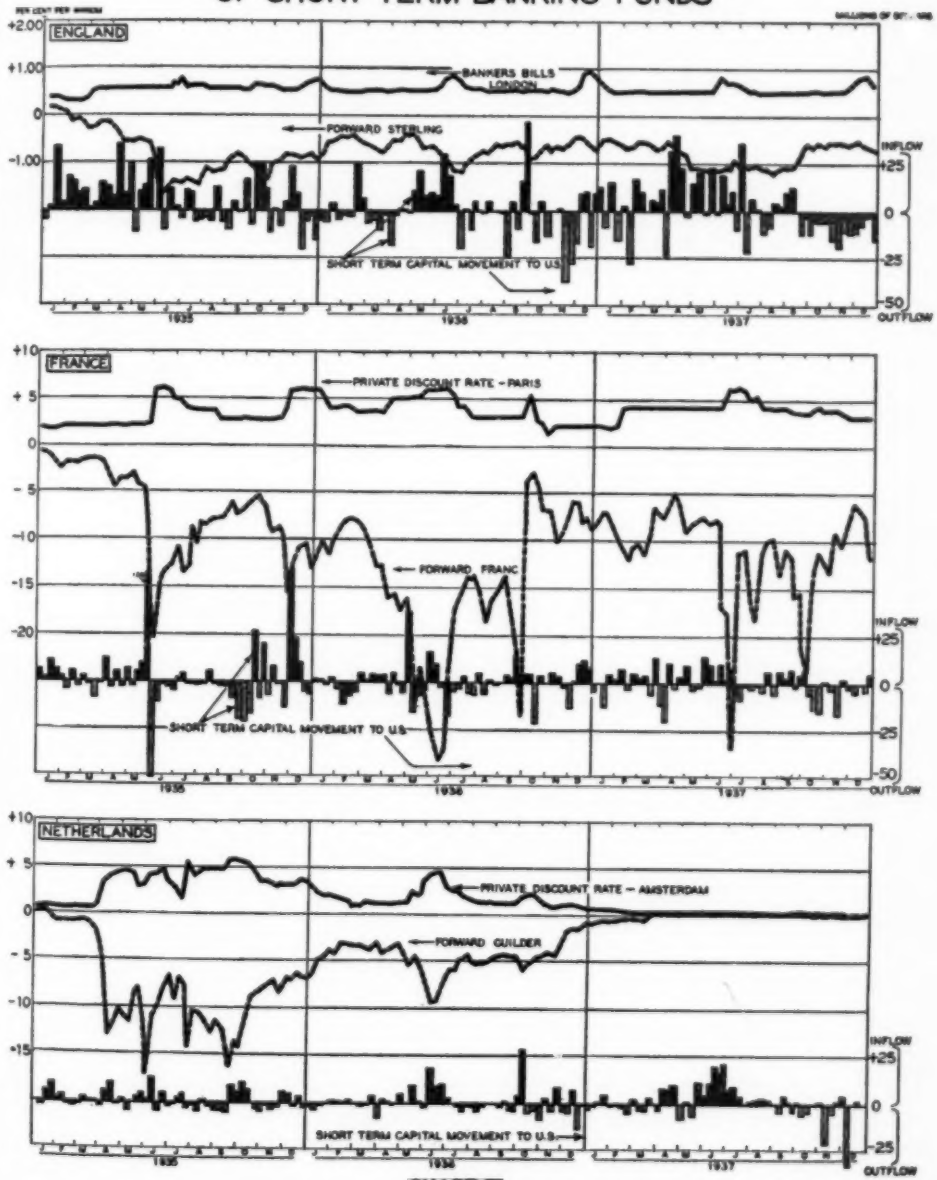

CHART II

The most striking feature of Chart I is how markedly the character of the forward market in sterling differs from those of the markets in the French franc and in the guilder. In the forward-sterling market the position of their domestic customers as reported by banks and bankers in the United States varies within a relatively wide range of $83,000,000, from $45,700,000 short in September, 1935, to $37,300,000 long in December, 1936. Moreover, changes in this position occur rapidly and appear at first glance to be associated in many instances with variations of the spot rate of exchange quoted for the pound. In the forward market for the French franc, on the other hand, the position of domestic customers has varied within a range of only $27,300,000, from $22,100,000 short on January 2, 1935, to $5,200,000 long on May 12, and again on July 14, 1937. This position started considerably short and gradually became long over the period. In the forward guilder the forward position of domestic customers varied within a still narrower range of $18,000,000[8] from $3,600,000 short on July 3, 1935, to $14,400,000 long on December 23, 1936. In addition, this forward position varied somewhat, going from long to short in 1935, then to long again in 1936, and to short again at the end of 1937. The changes in the forward positions of the American market in the French franc and in the guilder do not appear in either case to have been associated with the movements of the spot rate of exchange, except that the timing of the transition in the position in the French franc forward market occurred shortly after the devaluation of the currency in September, 1936.

The explanation for these striking differences among the various New York forward markets may be found on Chart II in the relation between the rates of interest and the three months' forward rates. There it will be seen that while the forward discount on sterling was not far from the bankers' bill rate in London, the discount on three months' francs, after March, 1935,

[8] The $8,700,000 short position appearing for January 8, 1936, appears to be erroneous. It resulted from an increase of $8,900,000 in contracts to purchase from domestic customers, reversed in the succeeding week by a drop of $8,800,000, and had no counterpart, either in contracts to purchase exchange forward from foreigners, in contracts to sell exchange, in foreign currency assets of the reporting banks, or in the banks' global position.

greatly exceeded the private discount rate in Paris, and the discount on guilders, between March, 1935 and December, 1936, was considerably wider than the private discount rate in Amsterdam. These differences merely mean that interest arbitrage took place freely and was effective in the pound, but that this was not the case with the franc or with the guilder over the twenty-month period already noted.[9]

The bankers' bill rate in London does not give a complete idea of the factors involved in interest arbitrage between New York and London, even if the New York interest return be taken as zero,[10] for several reasons. In the first place, New York funds placed in London earn a higher return than that indicated by this rate, because London banks, in their anxiety to acquire deposits, pay a higher rate of return on three-month time deposits than they can earn by investing the funds in bankers' or Treasury bills.[11] This means that two London rates would be needed: one

[9] Interest arbitrage is definable as the practice of placing funds on deposit or investing funds in a money market abroad with the exchange risk covered by a forward sale of the currency. Thus if the forward dollar is at a premium equivalent to 1 per cent per annum, a London bank can earn ½ per cent more by depositing funds in New York without interest and selling forward dollars against them than by investing the same funds in bankers' bills in London at ½ per cent. See also P. Einzig, *The Theory of Forward Exchange* (London, 1938), chap. xviii.

[10] Such appears to have been the case, at least until the end of March, 1937, despite dealers' quotations of the yield in ninety-one-day Treasury bills at 0.17 per cent per annum. Bills held for foreign account (see *Statistics*, Table 5) presumably represented mostly collection items rather than bills bought for foreign account in the New York market, and this presumption is strengthened by their concentration, prior to April, 1937, in Latin America and the Far East. When dealers' quotations on ninety-one-day United States Treasury bills reached 0.60 per cent per annum in April, 1937 (see *Federal Reserve Bulletin*, February, 1938, p. 146), foreigners found it worth while to employ their New York funds at interest and Treasury bills held for foreign account rose from $172,000 on March 17, 1937, to $282,523,000 on September 15, 1937 (see *Statistics*, Table 6). Thereafter, interest rates in New York eased off, as $300,000,000 was desterilized from the United States Treasury's inactive gold account, and foreign holdings of Treasury bills fell to $89,315,000 at the end of the year. Since the interest-bearing assets of foreigners in New York formed only a small portion of their total dollar funds, and as no interest is paid on deposits of foreign funds in New York, it seems wise to continue to regard the rate of interest on foreign funds in New York through 1937 as zero.

[11] See P. Einzig, "Deposit Hunting," *Banker*, XLIV (November, 1937), 92–97. Unfortunately there are no published interest rates on time deposits which might have been used for the purposes of this chart.

to indicate what rate of return New York banks could obtain on their funds and the other to illustrate what interest return the London banks must sacrifice before placing their funds in New York. Second, the money markets in London and New York are not so sensitive that they respond to all spreads between interest and forward rates, but only to those of some size. Einzig gives a figure of ½ per cent, which appears to be approximately correct.[12] In the case of sterling, then, loose limits were set to the fluctuations of the forward discount by the fact that interest arbitrage was prepared to operate to move funds either from New York to London or vice versa, under circumstances in which London banks paid 1 to 1⅛ per cent for foreign deposits, and the London bankers' bill rate held fairly close to ½ per cent, except at the middle and the end of the year when window-dressing by the banks made money temporarily scarce. In the French franc and in the guilder forward markets, restrictions against interest arbitrage by domestic banks[13] and the inability of foreign banks to obtain francs and guilders for the same purpose led to wide discrepancies between rates of interest and forward discounts. The forward market had to clear itself, i.e., a seller of forward francs had to offer a discount wide enough to attract someone willing to buy forward francs—and assuming that imports balance exports,

[12] See *The Theory of Forward Exchange*, p. 274. The deposits of London banks in this market were built up when the discount on forward sterling approached or reached 1 per cent per annum. Conversely, when the discount fell as low as ½ per cent, as in the spring of 1938, the sterling balances of New York banks rose (see *Statistics*, Reports 7 and 8, Table 14, which indicate that these balances increased from $37,812,000 on February 23, 1938, to $79,971,000 on June 22).

[13] Newspaper records give June 11, 1935, as the date of the first unofficial steps to curb speculation in France, when the Bank of France decided to discontinue loans on gold, and the Bank of England requested London banks to refrain from forward dealings in gold currencies if they believed the accounts were for speculative purposes (see *New York Journal of Commerce*, June 12, 1935). In July, 1935, the governor of the Bank of France drew the attention of the Paris banks to inconveniences resulting from facilitating certain speculative operations for the account of their clients (*New York Herald Tribune*, May 18, 1936). It is likely, however, that Paris banks were asked to exercise discrimination in using their own resources for interest arbitrage or for making funds available to clients for the same purpose throughout the successive crises of the period. Similar restrictions appear to have been in effect in the Netherlands, although probably administered at various times with varying degrees of severity, and their lifting is referred to in the *Wall Street Journal* for December 22, 1936.

a speculative seller of francs would have to give such a concession that someone would be induced to go long—rather than find itself continually cleared by interest arbitrage or "swap" operations undertaken by banks. Of course, some connection between the spot and forward markets was maintained during these periods. Foreign importers of goods from France and Holland may have shifted from the spot market to the forward, because of the inducement offered by the wide discount, and foreign exporters of goods to France and Holland who had previously sold their foreign currency receivables forward would be induced to borrow in Paris or Amsterdam if possible and thus shift from the forward to the spot market. Similarly, foreign names with international reputations were encouraged to finance their trade in the centers whose currencies were at wide discounts in the forward market, to take advantage of the spread, and by so doing to narrow it.[14] In these ways the demand for forward francs and guilders achieved some degree of elasticity, but this elasticity would have been more considerable in the absence of a prohibition on interest arbitrage.

One more general point may be made on Chart II before returning to a particularized discussion of specific periods in the record of specific currencies. The inflow of short-term capital to the United States for the account of England, France, and the Netherlands appears to be heaviest in periods of widening discounts on the pound, the franc, and the guilder, respectively, or the discount on the foreign currency in the forward market widens (the premium on forward dollars mounts) as the rate of inflow of short-term banking-funds to the United States increases. This relationship is an ordinary one and fails to indicate anything about the part played by speculative forward contracts in the

[14] This practice was restricted shortly after straight loans to foreigners to allow them to go short were prohibited. During the period of relatively strict foreign-exchange restrictions on the dollar between March, 1933, and November, 1934, however, American banks were permitted to make dollars available to foreigners not only on goods in transit to or stored in the United States but also on goods in transit between foreign countries or stored abroad. Such loans were considered "legitimate," although they evidently permitted foreigners to go short of the dollar or to earn the spread between the cost of the loan and the wide discount on forward dollars at that time, if they covered their positions by buying forward dollars.

total movement of capital, because, as was stressed above, it is impossible to separate foreign speculative transactions in forward dollars from swap transactions (interest arbitrage) in the American statistics. It should be noted, however, that changes in the forward position of domestic customers of reporting American banks in sterling are sufficiently large to affect the weekly flow of short-term capital between London and New York, while similar changes in positions in forward francs and in forward guilders are small in relation to the corresponding movement of liquid funds between New York and abroad.

III

The interrelation between speculation and the forward exchange may be more effectively set forth by specific examples. The difference between stabilizing and unstabilizing speculation may be illustrated by an example from the experience of the pound sterling in early 1935. How speculation in the forward market can be halted can be shown by the data for the franc in the spring of 1935; and how interest arbitrage reappears in a forward market can be illustrated by the guilder market in December, 1936.

In the early weeks of 1935, Americans (and foreigners) were still closing out the large short position in dollars which had been built up in 1932 and 1933 and maintained during the greater part of 1934. At the end of 1934 it appeared that the Supreme Court of the United States might invalidate the dollar devaluation by its gold-clause ruling, and this led to very heavy covering of short dollar positions, a sharp decline in sterling, a fall in the premium on forward sterling, its replacement by a discount, and a very large movement of English short-term banking funds to the United States. When sterling reached $4.76 in the week ended March 13, 1935, from $4.94 in the week ended January 2, the position of the domestic customers of reporting banks in the forward market had become short. Thereafter sterling rose but the market went farther short. Prior to March 13 the market had been indulging in unstabilizing speculation (or rather in the correction of previous unstabilizing speculation which had bid sterling up so high); after March 13 the short speculation against the pound, which grew as

the pound rose further from $4.76 to a level above $4.90 in May, furnishes an example of stabilizing speculation. Sterling was strong because of the heavy flight of liquid capital to London from the gold bloc; adverse speculation against sterling served to induce another movement of capital to New York so that the net inflow of funds to England was reduced.[15] Gradually, however, the forward market began to reduce its short position in sterling, since the pound continued to be supported by the capital flight from western Europe, until the American forward market, other than banks, actually went long in July, 1936, when average spot quotations for the pound had risen over $5.02. Thus stabilizing speculation itself was followed by unstabilizing speculation.[16]

Few wide shifts occurred in the American market's forward position in francs, and among the largest of these was the reduction in the short forward position from $15,700,000 on June 26, 1935, to $9,100,000 on the following Wednesday. This change may in part have been a reflection of a new attitude toward the likelihood of franc depreciation, on the part of Americans with long-term assets to hedge, with expected franc receivables or with a purely speculative interest in that currency, or it may have resulted from an underlying alteration of the trade or investment situation. Neither of these hypotheses appears to furnish a complete explanation for the relatively large change recorded in this particular week. This change appears to have been due in large part to the fact that many contracts matured at the end of the quarter and were not renewed because the discount on forward francs for three months had increased from an average of about $3\frac{1}{2}$ per cent per annum in April to an average of $12\frac{3}{4}$ per cent in

[15] The high price of sterling also served, of course, to induce some of the flight of capital to be directed to New York rather than London in the first instance.

[16] Undoubtedly some of the market's purchases of forward sterling represented cover for loans in London to finance American trade, these loans being induced by the wide discount. To this extent the increase in forward purchases did not represent a change in the New York market's speculative views.

Another example of stabilizing speculation can be found in the last quarter of 1937 when a heavy outflow of capital from the United States took place in response to the rumors that the American administration would devalue the dollar as a recovery measure. The market which was practically even in forward sterling in September, with the spot pound at $4.95, went short at $4.99 in October and November because it did not attach much credence to the rumors.

the week ended June 26 and 10$\frac{1}{16}$ per cent in the week ended July 3. At this level the cost of hedging and bear speculation was deemed too high by some individuals and concerns and some contracts taken out in April to sell forward francs before the end of June were closed out.

This high cost of hedging, which of course was responsible for the upward trend of the forward position adopted and maintained by the American market, can be illustrated in another way. If an asset of a fixed amount of francs had been hedged by a forward three months' sale on January 2, 1935, and renewed on six successive occasions on the first business day of succeeding quarters, the loss resulting from the September, 1936, devaluation would have been reduced only by less than half. The spot franc depreciated in New York from \$0.0663$\frac{1}{4}$ at the close of trading January 2, 1935, to \$0.0476$\frac{1}{2}$ on October 1, 1936, or by 187 points. The continued renewal of the forward contract, however, had cost 99$\frac{5}{8}$ points, or an average of 7$\frac{1}{4}$ per cent per annum over the period. This high cost of hedging and maintaining a hedged position, therefore, induced many to leave their long positions in francs unprotected.

As a final case study, the example of the forward guilder in December, 1936, may be taken to illustrate the effect of the withdrawal of restrictions. After the devaluation of the guilder, the Netherlands experienced a heavy repatriation of funds, a return to easy money conditions at home and a firm market tendency in the guilder. As money rates eased, the discount on forward-guilder contracts narrowed. In November, however, restrictions against foreign and domestic loans for the purpose of buying foreign exchange and against swap operations by the banks themselves appear to have been lifted. This had the effect of increasing the forward long position of the American market from \$4,400,000 on November 11, 1936, to \$14,000,000 two weeks later. Three months later—i.e., between February 17 and March 3, 1937—this forward position decreased from \$10,700,000 long to \$2,500,000.

When the restrictions on loans to foreigners in the Netherlands were lifted, the American market financed a small part of its trade by discounting acceptances in Amsterdam and covering the

exchange risk by buying forward guilders. The discount on forward guilders made Amsterdam the cheapest place in which to finance this trade, and it is likely, although it is impossible to tell at what rate the American firms or individuals were able to borrow, that they obtained credit at less than the forward-guilder discount, which was $3\frac{1}{16}$ per cent per annum on November 12 and $2\frac{1}{2}$ per cent on November 24, and thus derived a net profit from their borrowing operations. In the period between February 18 and March 3, 1937, the discount on forward guilders for three months amounted on the average to 0.27 per cent per annum, so that there was no incentive to renew the loans on the forward contracts.

IV

Certain practical as well as theoretical conclusions emerge from this study of the New York market in forward exchange. With respect to individual currencies, it appears first that the managers of sterling have working with or against them a considerable volume of speculative funds willing and even anxious to take exchange positions in the forward market at given or varying levels of exchange. If sterling has been steady within a comparatively narrow range, this speculation is likely to be of the stabilizing variety, and to make the task of maintaining an exchange rate easier, but the task of varying it harder. If the market takes the view that sterling is going to move from one range of fluctuation to another, however, the task of maintaining sterling is rendered more difficult because of this body of funds. In addition, the fact of the willingness to speculate in sterling exchange (and the British willingness to take positions in dollars) enables the managers of sterling to affect the volume and the direction of the movement of short-term funds, when the rate has been steady for a period, by the manipulation of the spot rate. This possibility of stabilizing speculation provides a favorable argument against the gold standard or for wide gold points on the gold standard.

The experience of the franc illustrates principally the evident fact that if the monetary authorities of a country do not make their currency available to outside markets, these markets cannot go short of it beyond the amounts they originally possessed. There can still be an outflow of domestic capital. Einzig has

recently insisted again that monetary authorities should not defend a currency by making it difficult to speculate against it, but should even buy their own currency forward as outside markets sell it, if they intend to maintain their currency through the bear attack. He is particularly critical of the Belgian exchange authorities,[17] who, when the belga was under attack in May, 1938, after the downward revaluation of the French franc by the Daladier government, refused credit to banks which themselves speculated against the belga, which undertook swap operations, buying sterling spot and selling it forward, or which loaned spot belgas to their foreign or local customers for the purpose of speculating against the currency. Einzig rests his case on his belief that while a wide discount in the forward market for a currency decreases the amount of forward sales, it increases the pressure on the spot exchange through its psychological effects on liquid capital. Einzig admits that this is debatable, but fails to see that the burden of proof rests on him to prove that the psychological effects of a high discount on a currency in the forward market are more conducive to capital flight than gold losses, increased discount and interest rates, weak spot-exchange rates, or any other of the usual accompaniments of a capital outflow.

If a high discount on forward contracts reduces the amount of forward selling, then it reduces the purely speculative pressure on the spot exchanges, in the first instance, without affecting the valid export of capital. If speculation is permitted in the forward market but is prevented from reaching the spot market by central bank sales of foreign currencies forward, the central bank acquires a contingent liability against its gold or foreign exchange reserves, and the issue is postponed in the forward market possibly as long as three months. At the maturity of the contracts, if the central bank has been able to maintain its currency, the results of its policy will depend upon whether the speculators want to reverse their forward sale, renew it, or whether they have meanwhile obtained spot funds, against which the forward sale had been a hedge, and want foreign currencies delivered to them. In

[17] "Some Theoretical-Technical Aspects of Official Forward Exchange Operations," *Economic Journal*, XLVIII (June, 1938), 249–55, and also *The Theory of Forward Exchange*, pp. 386 ff.

the last case only will the central bank lose gold at the end of the period. If the central bank has been unable to maintain its currency for the duration of its forward-exchange commitments, it will be obliged to sell its currency cheap and buy it dear. Whether or not forward support for the currency should be rendered depends upon the nature and extent of the speculation and the solubility of the fundamental problem which gave rise to the speculation. In the case of the belga, the policy of forbidding credit to banks which aided short speculation was highly successful and the belga crisis was over at the end of May. In the case of the French franc, the charted American forward position from 1935 to 1937 suggests that the wide discount made sales of forward francs by the American market, either for speculation or for hedging, extremely difficult.

No special conclusions follow from the episode of the guilder, although its study indicated how the spot and forward markets can be joined other than through bank arbitrage.

On the theoretical side, perhaps our most significant conclusion is that when it is stripped of its technical refinements and ramifications, the forward contract in foreign exchange introduces no real change into foreign exchange theory. Spot funds are moved between countries when a speculative position is taken in either spot or forward exchange, with the sole exception of the case of an equal and an opposite position being taken by someone else.[18] Covered balances, which Einzig distinguishes sharply from uncovered balances,[19] can be held only because there is a balance of forward purchases of the currency which can be satisfied only by the intermediation of an agency which buys the spot currency and sells it forward.[20] No short-term capital movement can occur without either a change in underlying conditions of trade, its

[18] The only circumstances under which this exception is important are those when one position is taken by the public and another by the authorities charged with the management of the currency.

[19] *Foreign Balances* (London, 1938), pp. 109–13.

[20] An exception arises in the case in which banks arrange forward contracts abroad. A New York bank might buy spot sterling and sell the forward cover in London. The London bank asked to sell forward dollars (buy the forward sterling) may be unable to buy forward dollars in the market and hence may buy spot dollars. In this way covered balances in two currencies can be built up simultaneously, without, of course, any short-term capital movement taking place on balance.

amounts, its directions, or its credit terms, or in a speculative position.[21]

The fact that speculative positions are not freely taken in various currencies is responsible for premiums and discounts on forward contracts and is also what permits interest rates in different markets to remain at different levels. In the absence of all speculation, the forward rate would correspond exactly and automatically to the differences between rates of return in various money markets since at least the interest parity would have to be offered to induce the interest arbitrage necessary to cover exchange risks which cannot be balanced out, and since competition would render it unnecessary to offer more than this.[22] With speculation present, the forward discount can differ from the interest parity and will adjust itself only slowly to changes in it, because a change in interest rates by changing the willingness of banks to undertake arbitrage at going levels will also change the readiness of speculators to undertake exchange risks or to cover existing risks; in an exchange market where the spot rate of exchange is so rigidly fixed that banks, individuals, and commercial concerns do not care in which currency they hold their liquid funds, rates of interest in the two countries become identical as the two money markets merge into one and forward exchange would sell flat, i.e., no one would have any incentive to offer a premium for a contract to buy the other currency and everyone would be willing to sell such a contract at any premium.

Speculation, therefore, is necessary to a forward market, unless that market is to be completely automatic; but a forward market is not indispensable to speculation.[23] Long speculation evidently does not require a forward market, since if one's credit is good (as it has to be in either case) one can borrow at home and buy foreign currencies; while in the case of short speculation one can borrow abroad and sell the foreign currency.

[21] H. Barger's remark that "the bull position in a given currency can increase only *pari passu* with the bear position ("Speculation and the Risk-Preference," *Journal of Political Economy*, XLVI [June, 1938], 404), is only true on the paper standard in the short run, unless Mr. Barger believes a country goes short of its own currency when it buys gold to finance an inflow of short-term banking funds.

[22] This statement abstracts from imperfections of the market.

[23] The same is true, of course, of commodity forward markets.

Finally, the conclusion that the technique of the forward market does not result in any essential differences in the analysis of exchange-rate fluctuations, or of international movements of short-term funds, should not be allowed to obscure either the very real contribution the market does make in providing inexpensive opportunities for hedging and speculation or the real character of a forward contract. Forward contracts have an exchange feature and a credit feature, the latter of which has failed to receive sufficient emphasis. If an importer buys forward exchange, he is in effect borrowing at home the money to lend abroad at interest until he requires it; and if the banking system is unable to marry his contract to buy exchange with a forward contract to sell, it must buy spot exchange with its resources and lend abroad until by contract it must make the exchange available to the importer.

This line of reasoning may also be applied in the case of official operations in forward exchange. If the exchange of a country is under attack and the authorities sell foreign currencies forward, they are in effect borrowing exchange abroad and lending it at home. By reducing the discount on their own currency or increasing the premium, they keep those who sell the exchange forward from affecting the spot market, and encourage spot purchases of their own currency from abroad against forward sales. The establishment of forward markets in weak currencies by strong central banks is similar in character. The market would only run one way, i.e., the strong central bank would be called upon only to buy the currency of the weak country, and such purchases would enable the strong country to build up covered balances in the weak country or the weak country to decrease the volume of covered balances it previously felt itself obliged to maintain in the strong country. In either case there is a short-term capital movement from the strong to the weak country and the forward-market device in effect enables the weak country to borrow from the strong. Whether this will be considered desirable depends, of course, on the strong country's policy with regard to short-term lending and on whether the discount on the forward contract in the weak currency adequately compensates the central bank for the exchange risk involved.

CURRENCY ISSUES TO OVERCOME DEPRESSIONS IN DELAWARE, NEW JERSEY, NEW YORK AND MARYLAND, 1715–37

RICHARD A. LESTER
University of Washington

THIS article supplements a paper published in the June, 1938, issue of this *Journal* entitled "Currency Issues To Overcome Depressions in Pennsylvania, 1723 and 1729." It deals with the currency experience of the other middle colonies during the period discussed in the paper on Pennsylvania. As explained there, the other middle colonies also issued currency to combat depressions in the early part of the eighteenth century. Delaware did so in 1723 and 1729, New Jersey in 1723 and 1733, New York in 1715 and 1737, and Maryland in 1733. In Maryland, most of the currency was simply given away, a certain sum to each person, in a manner that reminds one of Major Douglas' Social Credit proposals.[1]

As in the case of Pennsylvania, the results from currency issues during depressions in these four colonies seem to have been surprisingly favorable. Yet these colonies were subsequently rather conservative in their use of currency issues, so that the value of paper money in the middle colonies before the Revolutionary War was apparently as stable as, and in some of them more stable than, the purchasing power of money in countries on gold and silver standards.

The experience of each colony will be treated separately, after which some conclusions will be drawn from the combined experience of all four colonies. Some of the basic statistical and back-

[1] The author had hoped to treat more fully than is possible here the experiments of these other colonies with paper-money issues as an antidote for depressions. A change in residence to the west coast, however, has eliminated the possibility of further search of Colonial records in the near future, so that it seems advisable to publish now the material collected on the experience of Delaware, New Jersey, New York, and Maryland with monetary expansion as a device for restoring prosperity.

ground material which appeared in the paper on Pennsylvania will simply be referred to, and not repeated, here.

1. DELAWARE

Economic conditions and paper-money issues in Delaware during the first part of the eighteenth century closely paralleled economic conditions and currency issues in Pennsylvania. The province of Delaware was then "but a necessary Inlett" to the province of Pennsylvania. Both provinces were "in the Hands of the same Proprietors" and, although they had separate legislatures, the governor of Pennsylvania was also governor of the "Three Lower Counties of New Castle, Kent and Sussex" upon the Delaware River, which today comprise the state of Delaware.

It is not surprising to find, therefore, that these lower counties suffered as much from economic depression in 1723 as did Pennsylvania. It is also not surprising to find that on April 25, 1723, less than two months after Pennsylvania passed her first paper-money act, the three lower counties also passed their first paper-money bill. Like the act in Pennsylvania, this Delaware act was a loan-office measure, providing for an issue of £5,000 by loans up to £60 to any one person and at 5 per cent interest. As in Pennsylvania, an act was also passed in Delaware in 1723 lowering the legal rate of interest on private loans from 8 to 6 per cent,[2] and the first loan act was likewise soon followed by a second loan-issue act in the same year. Richard S. Rodney, in his study of *Colonial Finances in Delaware*, writes: "So immediate were the beneficial effects of this first Act that on November 2, 1723, a second Act was passed providing for the further issuance of £6,000" by means of 5 per cent loans.[3]

The economic situation in Delaware and southeastern Pennsylvania prior to these two paper-money acts is very fully explained by Francis Rawle in his book, *Ways and Means for the Inhabitants of Delaware To Become Rich*, published at Philadelphia in 1725.[4] This "Essay," Rawle states, was the result of his "serious Deliberation" on the fact that the settlers on the Delaware, "sober,

[2] *Laws of Delaware*, I, 96. [3] *Colonial Finances in Delaware* (1928), p. 18.

[4] This was the first book Benjamin Franklin ever printed.

religious and industrious People, who were of no mean Circumstances in their native Country, should be so soon reduc'd to so low a condition as of late we were."[5] He writes of the economic situation in Pennsylvania and Delaware at that time:

. . . . considering Trade is of the last importance to the Good and Prosperity of any Country, and how much it has languish'd for divers Years past in the Colonies lying on Delaware; insomuch that Trade not only sunk, but most of the middling People, and divers good House-keepers, as well as the inferiour Rank labour'd under inextricable Difficulties, Silver and Gold the only Legal Currency, being almost totally exhausted, or kept up, that thro' the Scarcity thereof, the Farmer to pay a Debt was forc'd to sell twice as much as he needed to come at Silver, and take one part in such Goods as he did not want, till at last scarce any Money could be come at, or discharge the Incumbrance great Numbers of Estates lay under; all Credit private and publick, being sunk.

And that this is not a groundless Suggestion, or a Misrepresentation of the State of the Country; but a Truth known to all who saw the late deplorable Condition of these Colonies compared to what they were some Years past. When Grain bore a Price, the Farmer coul'd live by his Labour, the Tradesman, the Artificer and the Merchant encreased in Wealth and got Estates, what Colony then on the Continent of America of Better Credit and more punctual in their Dealing? but since Husbandry the Foundation of our Trade has been so fatally discouraged by the low Price of Grain, and our Currency, the vital Spirit and Blood of the Body politick stagnated, instead of (prompt Payment) so much the Honour of our Country, has been introduc'd the mean and scandalous Way of *Discount*, *Truck* and *Turn-overs*, which ended at last in rending Law-Suits and barbarous Attachments, the Bane of Concord, Peace and Civil Society, and the Preludes of Poverty.

Hence it was that this melancholy Scene of Affairs being laid to Heart by some sympathising Persons from a Sense of the languishing Condition of the Country crying for Relief from their Representatives, who, as honest Men and worthy Patriots, engag'd themselves for their Country's Relief, by providing a Medium for Commerce, and Dealing by a Paper-Credit, which tho' far short of what the Negoce of these Colonies requir'd, yet it answer'd our present Exigencies, reviv'd Trade, render'd Commerce and Dealing more easie and safe.

And 'tis with much Pleasure I have since met with divers who have acknowledged the Advantages they have receiv'd thereby, as having no Prospect of being reliev'd or freeing their Estates from the Incumbrances and Engagements they were under but thereby. . . . .[6]

[5] P. 7.

[6] *Op. cit.*, pp. 4, 5, 6.

Toward the end of his essay Rawle, turning to a consideration of "Paper-Money," said that he had "already intimated how far it [had] been conducive to restore Credit, relieve the Exigencies of this Province, and revive the languishing State of Trade, with divers other Advantages."[7] He warned that

> .... due Care ought to be had to preserve the Value of our Paper-Currency .... by continuing the Care already taken in the Security, and also restricting the Sum in a due Proportion to the Trade of this River; for a great Excess in that Respect will inevitably debase the Value of it, tho' a reasonable plenty is advantageous in encreasing Trade and Navigation, which cannot thrive without it.[8]

In this same essay Rawle expressed some advanced and sound notions on money and the precious metals when he wrote:

> The very great Abundance of Silver and Gold in any Place lessens the Value of it, tho' it may still retain the same Denomination, or be called so much per Ounce as it was before, yet a greater Quantity of it must be given for all Vendibles. On the other Hand, the too great Scarcity of it enhances its Value by debasing the Price of Vendibles to the other Extream, that even the Husbandman, etc. cannot live by his Labour, for the Scarcity of Cash makes few Buyers, and consequently miserable Markets, when otherways they might be tolerably good.[9]

The amounts of Delaware paper money outstanding on various dates are indicated in Table 1.[10]

TABLE 1

DELAWARE CURRENCY IN CIRCULATION AT VARIOUS TIMES

1723	£11,000	1739	£17,250
1727	8,250	1745	14,000
1734	20,250	1746	20,000

Relatively little data exist on the exchange value of Delaware's paper money. Table 2 indicates its value in terms of British pounds sterling on a few dates.[11]

[7] *Ibid.*, p. 55. [8] *Ibid.*, p. 58. [9] *Ibid.*

[10] *British Board of Trade Papers, Proprieties*, Vol. XIV, T 25, T 26; and *Miscellaneous Papers of the Three Lower Counties upon Delaware, 1635–1805* (MS in Historical Society of Pennsylvania): "Report of the Committee of Assembly of the Lower Counties of the State of Their Paper Currency, September 26, 1749," p. 225.

[11] Rodney, *op. cit.*, pp. 23, 38, 39; *Miscellaneous Papers of the Three Lower Counties*, p. 225; and *American Weekly Mercury*, March 26–April 2, 1730.

On and after January 15, 1730, 110 merchants of Philadelphia agreed to accept the paper money of Delaware in payment for one-quarter of all sums due them up to £12,000, and promised further to do all they could "towards abolishing all Distinction" between the currency of Pennsylvania and Delaware.[12] On March 25, 1730, the trustees of the Loan Office of Pennsylvania, established by the currency loan acts, agreed to take one-quarter of all sums due on loans in the form of Delaware currency.[13] Charles P. Keith writes:

> Delaware currency, although without government sanction in Pennsylvania, was accepted by the merchants there as it continued to be issued, confidence in it doubtless increasing as there was seen to be scarcely any default by the Delawareans to whom the bills were issued—only two small plantations had been sold by the Trustees before November 15, 1729.[14]

TABLE 2

EXCHANGE ON LONDON FOR £100 STERLING IN DELAWARE

1730.....	£150*	1749.....	£159
1739.....	134⅓	1760–61.....	172

* Delaware currency.

By 1729 Delaware, along with a number of the neighboring colonies, was suffering once more from a depression or "languishing Trade," and the inhabitants were demanding an additional issue of paper money. A part of the £11,000 issued in 1723 had been retired and the people maintained that there was "wanting a sufficient Medium to carry on Trade."[15] In October, 1729, the governor told the assembly: "I have indeed heard Complaints of a Scarcity of a Currency in these Counties, as we had the same of late in the Province [of Pennsylvania]."[16] The assembly assured the governor that what he had

> Heard of the Scarcity of Paper-Currency [could not] possibly come up to a lively and just Description of the present Distress of the Good People of this

[12] *American Weekly Mercury*, March 26–April 2, 1730.

[13] *Ibid.*, July 2–9, 1730.

[14] *Chronicles of Pennsylvania from the English Revolution to the Peace of Aix-la-Chapelle, 1688–1748*, II (1917), 673.

[15] *British Board of Trade Papers: Proprieties*, Vol. XIV, T 26.

[16] *Pennsylvania Gazette*, No. 44, October 23–27, 1729.

Government: Their Cry is loud and general, their Necessities great and pressing, and call for the most speedy and effectual Relief. Payments and Traffick are at a Stand among us.[17]

In order to provide "a proper Currency to carry on their Traffick," the Delaware legislature passed an act in 1729 authorizing a further issue of £12,000 on loan at 5 per cent interest. The same sort of a loan act was likewise passed in 1734 for the same amount of £12,000, because by then £3,750 of the 1729 issue had been retired "and the Number of Inhabitants [was] still increasing."[18] In June, 1745, the governor estimated that there were "more than 40,000" inhabitants in Delaware.[19]

In December, 1739, the governor reported to the British Lords of Trade that prices and wages had not risen since the first issue of paper money in 1723. He wrote:

And we find that Wheat and all other Commodities the Produce of these Counties are at this Time to be purchased with our Bills of Credit as cheap as at the Time when Gold and Silver were the Medium of Trade here; And Tradesmen and Labourers are now paid with Bills of Credit at the same rates and no more than before the issuing of the said Bills.[20]

In June, 1745, the English agent for the three lower counties maintained that the paper money issued there had "always been lent upon sufficient Securities, & under just Restrictions, & the Funds [had] never once [been] diverted, or broke in upon." He added that the inhabitants of Delaware owed "a great Part of their flourishing Circumstances to" the currency issues, by which "their Trade with [Britain had] been largely encreased."[21]

In 1746 there was a further issue of £20,000 on loan, and from then until 1759 at least £23,000 was issued "for the King's use" and "the annoying of his Majesty's enemies," the French and Indians. These were apparently the first currency issues in Delaware that were not circulated by loan but were to be redeemed from taxes. The assembly of Delaware found that these contributions "toward the support of the common cause" resulted in "ex-

[17] *Ibid.* [18] *British Board of Trade Papers: Proprieties*, Vol. XIV, T 26.

[19] *Miscellaneous Papers of the Three Lower Counties*, p. 195.

[20] *British Board of Trade Papers: Proprieties*, Vol. XIV, T 26.

[21] *Miscellaneous Papers of the Three Lower Counties*, p. 195.

hausting all their public funds" and led "to the impoverishing [of] their constituents by heavy taxes."[22]

In passing an act in 1759, reissuing £20,000 of paper money "to be lett out on loan," the assembly of Delaware asserted that the former currency issues "by experience" had "been found to be very useful for carrying on the trade and commerce of" Delaware and that "by means of the interest-money, arising on the loan of the said bills, the inhabitants of these counties have been enabled to support the government in an honorable manner, and to erect some, and repair others of the public buildings."[23]

The effect of currency issues on trade and commerce as well as the "saving" to the government from the interest receipts on currency loans apparently made a deep impression upon the inhabitants of Delaware. In a currency act passed as late as 1775 one finds the assembly still repeating the same statements about the advantages to be reaped from such currency issues that were expressed in the currency act of 1759.[24]

2. NEW JERSEY

New Jersey issued small sums of paper money in 1709 and 1711 for two military expeditions against Canada, and in 1717, because of tax delinquency, there was a currency issue of £4,670, which was "soon redeemed." In fact, all these early currency issues had been withdrawn from circulation, when the depression of the early 1720's seized New Jersey.[25]

In November, 1722, James Logan reported that Pennsylvania had "never been under such low circumstances for want of Trade and Money" as then and that in New Jersey trade was even "more dull" than in Pennsylvania.[26] In May, 1723, Logan said that Pennsylvania and New Jersey were then "reduced to so low a Condition by being drained of Money and by a general Decay of

[22] *Laws of Delaware*, I, 353.

[23] *Ibid.*, pp. 352–53. [24] *Ibid.*, p. 571.

[25] L. Q. C. Elmer, *History of the Early Settlement and Progress of Cumberland County, New Jersey; and of the Currency of This and the Adjoining Colonies* (1869), p. 123.

[26] Logan to Amos Strettle, November 12, 1722, *Letter Book of James Logan, 1717 to 1731*, pp. 297–98.

Trade that few buyers offer for Land that are capable of making any tolerable Pay," and he added: "In Jersey Lands sell more Difficultly than with us [in Pennsylvania]."[27]

Soon the inhabitants of various sections of New Jersey were complaining about the state of trade and the scarcity of money. Especially did such complaints and petitions for an issue of paper money become loud and numerous after the first issue of paper money was authorized in Pennsylvania in March, 1723.[28] Finally, on November 30, 1723, the New Jersey legislature passed an act authorizing a currency issue of £40,000 to be put into circulation by means of loans to private individuals at 5 per cent interest. The currency was to be dated as of March 25, 1724, and at that time the county loan officers were to begin to make loans of not more than £100 to any one person.

The preamble of the paper money act of 1723 explains the state of affairs that led to its enactment:

Whereas many Petitions and Applications have been made to his Excellency the Governor of this Province, by Freeholders, Merchants and Inhabitants of the same, setting forth, That the Silver and Gold formerly Current in this Province, is almost entirely Exported to Great Britain and else-where, and thereby the many Hardships which His Majesty's good Subjects, within this Colony, lie under, for want of a Currency of Money, ... And his Excellency the Governor having the Good and Ease of His Majesty's Subjects of this Province at Heart, has been pleased to call their Representatives together in General Assembly, to provide Remedies for the Grievances aforesaid, who .... taking into their serious Consideration the Miserable Circumstances of the Inhabitants of the several Counties which they Represent, for want of a Medium of Trade or Currency of Money: And that .... to pay the small Taxes for Support of this Government they have been obliged to cut down and pay in their Plate, Ear-Rings and other Jewels; And that many Law-Suits and Differences have arisen, and do daily arise among them, which will be the Ruin of a great Number of the said Inhabitants, if some Method be not found out for their Relief. And this Assembly having deliberately considered the many Petitions to the Purposes aforesaid, to them presented, and being sensible, of their own Knowledge, that the Matters of Fact, therein set forth, are True, and being well Informed of the Relief which the Neighbouring Provinces have found, in the

[27] Logan to Amos Strettle, May 9, 1723, *ibid.*, p. 317.

[28] See, e.g., *New Jersey Assembly Votes*, October 8 and 9 and November 1–7 and 12, 1723.

like Case, by a Paper Currency, and hoping the like Effects from it, and finding no other Way to Remedy the Grievances aforesaid, of His Majesty's Subjects here. . . . ."[29]

passed the £40,000 paper-money act.

The inhabitants of New Jersey as well as the governor were convinced that an issue of paper money would "promote the Trade and Industry of the Province," in the same way that it had done in neighboring provinces, which had "all found the benefit of a paper Currency."[30] The governor spoke especially of New York as "a remarkable Instance" of "the benefit" of paper money, and he spoke with personal knowledge as New Jersey and New York had had the same governor, though a different legislature, since 1702.[31] He felt that the lending of £40,000 at 5 per cent, whereas "the common Interest of Money [was] 8 per Cent," would be "a great means to assist the Industry and increase the produce of the Colony, which stagnated before for want of a Currency."[32] Furthermore, these 5 per cent loans would be of "advantage to private persons," so that a man who had fallen into debt during the depression could "get out of it again without being Harrissed and torn to pieces at the will of his Creditor."[33]

Prior to the passage of this Loan Office Act of November 30, 1723, "many Law Suits had been commenced against Persons of good Estates, who, by Reason of the extream Scarcity of Money in the Province," simply could not "raise the Money sued for by Sale of their Effects," nor "for Want of Buyers" could the sheriffs dispose of such a debtor's goods at sheriffs' sales, so that such "Persons of good Estates" sometimes found themselves "in Goal [*sic*]" for debt.[34] To avoid such lawsuits and imprisonment of debtors, the loan act of 1723 provided for a debt moratorium or stay of executions for indebtedness until the £40,000 was actually issued.

As proof of the success of the currency act of 1723, the governor pointed out in May, 1724, seven weeks after the lending of the £40,000 commenced, that the act had "already reduced the Law

[29] *Laws of 1723*, chap. lxxxvii.
[30] *New Jersey Archives*, V, 87.
[31] *Ibid.*
[32] *Ibid.*
[33] *Ibid.*
[34] *Laws of 1723*, chap. lxxxvii.

suits from several hundreds to almost none at all."[35] At the same time James Alexander,[36] a wealthy merchant and foremost lawyer in New Jersey, told the British Lords of Trade:

> So Remarkable was this that in one Small County in New Jersey (where there is ten) there was near three hundred Actions Commenced In the year before this bill past and So Great an Alteration has this Act made In that County that to one Court which has been Since the bills were made Current (whereof that is only four in A Year) there was only five actions.[37]

As further proof of the beneficial results of the act, Alexander pointed out:

> Before this act the people of business In that province Could hardly Get So Much of the Money oweing to them as to pay the Lawyers for Sueing for it which very much tied up their hands from prosecuting their business but Since the act their Debts Came in with Ease and are thereby Not onely Enabled to Go on with their former usual business but Diverse do begin to build vessels to trade with which May be a beginning to have forreign Trade of their own.[38]

In his letter to the Lords of Trade, James Alexander stated that another reason for the issue of paper money in New Jersey was the "gain" of "£1000 per Annum" to the province that would result from such an issue. This £1,000 gain he figured as follows: New York and Pennsylvania have about £100,000 outstanding in paper money. About one-fourth of the exports of New York and of Pennsylvania consist of "the Groath of Jersey." Therefore, about £20,000 of New York and Pennsylvania currency circulates in New Jersey and £20,000 at 5 per cent interest is £1,000.[39] He found it "hard to imagine" why New Jersey should continue to use "the bills of New York and Pensilvania at So Great a gain to them And Loss to Jersey."[40] Apparently the British Lords of Trade felt much the same as James Alexander, for they were willing to "let this Act lye by Probationary," as they figured that it should result in a "profit to the publick of the sum of £5,772" from the interest payments over a ten-year period.[41]

[35] *New Jersey Archives*, V, 91.

[36] James Alexander, as a member of the assembly, had played the most important role in drawing up the paper-money bill.

[37] *New Jersey Archives*, V, 95.

[38] *Ibid.* [39] *Ibid.*, p. 96. [40] *Ibid.* [41] *Ibid.*, p. 121.

Some of the £40,000 of paper money issued in New Jersey in 1724 also circulated in New York and Pennsylvania. In Pennsylvania it was exchanged "without any Scruple or Discount," but in New York at first it was accepted only at a discount of about 15 per cent.[42] However, by 1727, New Jersey currency was accepted without discount in New York, and by 1735 it was at a premium in New York, the premium reaching 12½ per cent by 1740.[43]

The exchange value of New Jersey currency in terms of British pounds sterling closely followed that of Pennsylvania during the period from 1724 to 1765, for New Jersey currency usually exchanged at par with Pennsylvania currency.[44] Table 3 indicates in a rough way the exchange value of New Jersey currency at various dates in terms of British pounds sterling.[45]

TABLE 3

EXCHANGE ON LONDON FOR £100 STERLING IN NEW JERSEY

1709–14	£150*	1740	£160
1716	143	1741–42	150
1724–25	149	1748	180
1737	170	1749	170
1738	165	1750–64...average of about	170
1739	170		

* New Jersey currency.

In December, 1726, a group of fourteen Perth Amboy merchants certified that, in the year 1724, the currencies of New Jersey and Pennsylvania were at a discount in terms of gold "to about 15 per Cent which Continued also most of the year 1725," but that, in December, 1726, the discount was "very Much Decreased, & Decreaseing So that Gold may be Got for 5 or 6 per Cent Difference & in Small Sums there is no Difference allowed at

[42] *Ibid.*, pp. 154–55.

[43] *Ibid.*, pp. 154–55, 420, and VI, 135.

[44] *Ibid.*, V, 154–55, 417; VIII, 97; and *Proceedings of the New Jersey Historical Society*, V (1850), 147–48.

[45] References in n. 44 and *New Jersey Archives*, IV, 241; VI, 133–34; VIII, 96, 357; *Documents Relating to the Colonial History of the State of New Jersey*, XV, 106–8, 195–96; *British Board of Trade Papers, Plantations General*, XII, N 40; and *The Papers of Lewis Morris, Governor of the Province of New Jersey, from 1738 to 1746* ("Collections of the New Jersey Historical Society," Vol. IV [1852]), pp. 49, 156–57.

all."[46] In 1755 New Jersey's legislative agent in London told the Lords of Trade "That it is presumed the Bills of Credit of New Jersey are of equal Credit & Reputation & maintained as invariable a Currency as those of Pensilvania in all respects, which is a fact acknowledged by every body whom [he had] conferred with acquainted with those Provinces."[47]

The figures for the exchange value of New Jersey currency in Table 3 can be compared with the figures in Table 4, indicating the amount of such currency outstanding at various times.[48]

TABLE 4

NEW JERSEY CURRENCY IN CIRCULATION IN VARIOUS YEARS

1724	£40,000	1734	£ 25,400
1725	36,940	1735	22,700
1726	32,880	1736	20,000
1727	28,820	1737–40	60,000
1728	24,760	1749	37,850
1729	20,700	1754	3,000
1730	17,640	1757	107,000
1731	14,580	1758	155,151
1732	11,520	1764	247,500
1733	28,460	1769	190,000

The per capita amount of currency in circulation was £1 in 1726 and about £2 in 1758.[49] Benjamin Franklin printed New Jersey's paper money from 1727, when there was an issue to replace worn and torn bills, until 1746.[50] On July 22, 1736, he notified the readers of his *Pennsylvania Gazette:*

> The printer hopes the irregular publication of this paper will be excused a few times by his town readers, on consideration of his being at Burlington [New Jersey] with the press, laboring for the public good, to make money more plentiful.

[46] *New Jersey Archives*, V, 154–55.

[47] *Ibid.*, VIII, 97.

[48] *Ibid.*, V, 410; VII, 379; IX, 106–8; *Laws of 1727*, chap. xcvi; H. Phillips, *Historical Sketches of the Paper Currency of the American Colonies* (1865), p. 76; *British Board of Trade Papers; Plantations General*, Vol. XII, N 40; and *Proceedings of the New Jersey Historical Society*, VIII (1923), 14.

[49] A census showed the population as 32,442 in 1726 and the governor estimated the population at about 75,000 in 1755 (*Documentary History of the State of New York*, V [1855], 819, and *Proceedings of the New Jersey Historical Society* [2d ser., 1882–83]), p. 156.

[50] Phillips, *op. cit.*, p. 67.

Table 4 shows that less than £20,000 New Jersey currency was in circulation in 1730, when the inhabitants again began to complain of the scarcity of money. Conscientious retirement and destruction of the paper money paid in each year by the borrowers was putting the inhabitants "under very great difficulties to procure" money to pay the instalments each year on their loans, and their "difficulties" seemed to be increasing as more and more paper money was retired and burned.[51] Probably another reason that New Jersey currency seemed scarce was because it enjoyed such an extensive area of circulation. It was widely used in neighboring colonies, especially for making payments between New York and Pennsylvania. According to the governor, in 1730 it was "reckon'd that scarce a third part [of New Jersey's currency] continues in the province."[52]

New Jersey in 1730 was suffering also, along with other American colonies, from the widespread depression at that time. With the "decay of trade" and scarcity of money, it became increasingly difficult to collect taxes, and in 1730 the Colonial treasury was practically bare, with unpaid salary warrants outstanding dated as far back as 1726.[53] In the middle of 1730 the New Jersey Assembly passed the second loan act, providing for an issue of £20,000 more by 5 per cent loans secured by real estate security. This "Second Bank," as it was called, did not differ in any important respect from the "First Bank" of 1723. However, the actual issue of the £20,000 did not occur until the middle of 1733, as the bill carried a proviso, required by the British authorities, that it would not take effect until approved by the king.

In the middle of 1733 New Jersey was still suffering from the depression. This is indicated by introduction into the assembly of bills to reduce the legal rate of interest and to relieve "poor distressed Prisoners for Debt," by the passage of an act so "regulating the Practice of the Law" as to discourage any suits by creditors to recover sums owed to them,[54] and by a deficit in the treasurers' accounts of about £2,900.[55]

[51] *New Jersey Archives*, V, 289. [52] *Ibid.* [53] *Ibid.*, XIV, 380, 440, 442.
[54] *Ibid.*, V, 378–95, 404–5. This act was disallowed by the king early in 1735.
[55] *Ibid.*, XIV, 491–97.

The expressed purpose of the £20,000 currency act was "for encreasing the Currency of this Colony, (now too small) for enabling the Inhabitants thereof the better to support the Government, to discharge their Engagements in the Loan-Offices, pay their Debts, and to relieve their other Necessities."[56] This act had hardly gone into effect in the middle of 1733, after receiving the king's approval, when a law establishing a "Third Bank" of £40,000 was passed by the legislature on August 13, 1733.

Presumably this third loan act, containing provisions essentially the same as the two former loan acts, was passed before the stimulating effects of the "Second Bank" were experienced and with the thought that, by the time it received royal approval, the colony would be in need of additional currency. In sending the bill to the British authorities for approval, the governor explained that the members of the assembly "unanimously agreed that there was a necessity for" such an additional issue, which "was strongly Pressed on all sides," and he added: "I must say they do labour under great hardships for want of Paper money."[57] The preamble of the act states that it was needed to enable the "Inhabitants to support Government, discharge their Engagements, and carry on their Trade" because

> the Bills of Credit of this Province have obtained a general Currency in our Neighbouring Provinces, and by reason thereof a great part of the said Bills remain in the Hands of Persons residing in the said Provinces: Also for that upwards of three fourths parts of the Forty Thousand Pounds in the said Bills formerly made current in this Province [the First Bank], are now sunk, according to the Directions of the Act by which they were made; so that notwithstanding the Twenty Thousand Pounds in like Bills lately made [the Second Bank], there are not a sufficient Quantity now remaining to answer the emergent Occasions of the Inhabitants of this Province.[58]

The third loan act was not approved by the king until May, 1735, and the lending of the £40,000 did not begin until March 25, 1737, almost four years after the assembly passed the act.[59]

The colonists all agreed that the three loan acts stimulated trade and worked to enhance the welfare of the colony.[60] The

[56] *Laws of 1730*, chap. xlvii.

[57] *New Jersey Archives*, V, 365.

[58] *Laws of 1733*, chap. lviii.

[59] *New Jersey Archives*, VII, 247.

[60] Phillips, *op. cit.*, pp. 69, 73.

Colonial assembly repeatedly, in 1747, 1758, and 1769, passed additional loan acts, but they were rejected by the authorities in Britain. Petitions by the New Jersey Assembly to the king and Lords of Trade were in vain. In response to a petition of the New Jersey Assembly in 1753 to issue £60,000 by a loan bill modeled after the loan acts of 1723, 1730, and 1733, the Lords of Trade advised the Privy Council:

> . . . . It has been represented to Us, that the issuing Bills of Credit upon Loan within this Province has been found to be the least burthensome method of levying Taxes for the Support of Government, and has also been of great Service in enabling the Inhabitants to extend and improve their Trade and Settlements. . . . .
>
> From the Evidence laid before Us of the Effect and Operation of the bills of Credit formerly issued in this Province, and from the Representation of Persons well acquainted with the nature of Paper Money in general, We are inclined to believe, that a moderate quantity issued upon proper security and having a proper Fund for its redemption within a limited time, may operate to the advantage of a trading Colony, and may also be the least burthensome method of levying money for the support of Government.[61]

The Lords of Trade, however, objected to "making such Paper money a legal tender in all Payments," which the authorities in New Jersey declared was necessary if the paper money was to have a wide circulation and was not to depreciate in value in terms of commodities and the currency of neighboring colonies, which had declared their currency legal tender within their boundaries. Previous issues in New Jersey had been made legal tender. Again, in 1758, in reply to another petition for issuing currency on loan, the Lords of Trade replied that "tho' a Paper Currency may be advantageous to a Trading Colony," it "ought never to be admitted, unless it can be effected without enforcing the legality of the Tender of the Bills so to be issued."[62] This issue was never solved and New Jersey did not issue any more money on loan from 1735 until 1776.

Though the British authorities vetoed all attempts to establish a fourth bank in New Jersey they readily approved of the £347,000 of "war notes" issued in New Jersey between 1755 and 1764 "for the King's use" in fighting the French and Indians.

[61] *New Jersey Archives*, VII, Part I, 197–98. [62] *Ibid.*, IX, 36–37.

During those ten years there was at least one currency issue each year, and each act of issue levied taxes to retire that issue. As Edgar J. Fisher says, "It is to the honor of New Jersey that, notwithstanding the enormous sums, which were issued in paper bills, the emissions were always regularly and properly conducted."[63]

One of the reasons why the colonists were so enthusiastic for another loan bill that they piled the table of the assembly high with petitions for another loan act in 1767 and 1768 was that such acts did away with all tax levies.[64] From 1733 to 1751 the interest on the loans made under the Second and Third banks was sufficient to support the provincial government, so that no tax "was raised on the People for Support of Government" during that nineteen-year period.[65] The cost of running the Colonial government rose gradually from £1,000 in 1702 to £1,775 in 1749 and £3,000 in 1770.[66] The interest income from the £60,000 of loan currency outstanding in 1741 was reported as £3,000, or almost 100 per cent more than the ordinary and extraordinary cost of operating the provincial government.[67]

The governor reported that the people in New Jersey by 1741 generally preferred

> . . . . the bills of credit current Amongst them, whose Value they know, to Silver or Gold which they do not; and few of them having need of [making] remittances [to Britain, they] are not concern'd whether bills of Exchange be cheap or deare, which may be one reason that the bills or what they call the Paper Money of this Province have not only retain'd but Encreas'd their Credit being now 12½ Per Cent better than those of the neighbouring Province of New York.[68]

It is no wonder that the colonists considered their paper money more stable than, and preferable to, gold and silver when, as the

[63] *New Jersey as a Royal Province, 1738 to 1776* ("Columbia University Studies in History, Economics and Public Law," Vol. XLI [1911]), p. 289.

[64] *Ibid.*, p. 298, and *Assembly Journal*, 1767 and 1768.

[65] *New Jersey Archives*, VII, 245, and Fisher, *op. cit.*, p. 303.

[66] *New Jersey Archives*, VII, 245, and R. W. Parker, "Taxes and Money in New Jersey before the Revolution," *Proceedings of the New Jersey Historical Society* (2d ser.), VII, 149.

[67] *Ibid.*

[68] *New Jersey Archives*, VI, 135.

governor then reported, the currency of New Jersey had "in 2 or 3 Months' time" appreciated 26 per cent in terms of British pounds sterling or to £125 for £100 sterling, which was 6 per cent above par.[69] At this time it was reported that the colonists were even hoarding New Jersey currency.[70] The governor's council thought that the "Chief Cause" of this sharp drop in "the Course of Exchange with Great Britain" was that New Jersey's exports had "of late greatly increas'd."[71] Pennsylvania currency also appreciated in terms of British pounds sterling at this time (1740 and 1741) and for much the same reason.[72]

If New Jersey's currency did no more than displace gold and silver coin, and served as money at least as well as such coin, then the "savings" in taxes from the interest on the currency loans represented a real saving to the community, resulting from the substitution of a cheap, easily made money for an expensive money that was difficult to make and to use in transacting business. If, on top of that, paper money gave the colony a more satisfactory price level and thus helped to stimulate business prosperity, that would represent an additional social "saving" to the credit of the currency issues.

All of the New Jersey governors who had to handle the subject of currency issues (Cosby, Burnet, Montgomerie, Morris, Belcher, and Franklin) personally favored the issue of a moderate amount of paper money circulated by loans, even though the governors were appointed and recalled by the authorities in England.[73] C. P. Tanner says that "Burnet and Montgomerie were men of honor, whose careers show that they were willing to face public disapproval if they deemed it in line with their duty," so that they must have "honestly believed that the conditions of the province required the issue of a paper currency."[74] Belcher and

[69] *Ibid.*, pp. 133–34. [70] *Ibid.*, p. 103. [71] *Ibid.* XV, 196.

[72] See the previous paper on Pennsylvania in the June, 1938, issue of this *Journal*, p. 371, n. 145.

[73] Fisher, *op. cit.*, p. 304, and E. P. Tanner, *The Province of New Jersey, 1664–1738* ("Columbia University Studies in History, Economics, and Public Law," Vol. XXX [1908]), pp. 554–58.

[74] *Ibid.*, p. 558.

Franklin went so far as to urge the Lords of Trade to allow the passage of loan acts, though such action was in direct conflict with the instructions given those governors by the authorities in London.[75]

Indeed, the currency experience of New Jersey represents a worthy record of achievement. From the first issue in 1709 to the last issue in 1786, all the paper money circulated by the colony was punctually and faithfully redeemed.[76] In December, 1769, the assembly could truthfully say:

> . . . . The punctuality and care with which the sums heretofore issued in this Colony in bills of credit have been sunk according to the Acts that respectively made them current can leave no room to doubt of the credit of the bills hereby issued, being in that respect properly supported as all other issues in this Colony have been, even so as to increase in credit and demand without danger of depreciation in value, or inconvenience to any individual.[77]

3. NEW YORK

As in New Jersey, a military expedition "for the reduceing of Canada" led to the first issue of paper money in New York in 1709. In that year the colony of New York issued £13,000 and later, in 1711, a sum of £10,000 more currency was issued to help finance the second unsuccessful expedition against the French in Canada. In both expeditions to Canada the actual expense incurred far exceeded the sum of currency issued, so that the colony found itself deeply in debt. It is not surprising, therefore, to find that New York paid off its "several debts" by two issues of paper money. The first issue of £27,680, authorized by an act passed in September, 1714, was not put into circulation until the act was approved by the English authorities in June, 1715; and the second issue of £16,607 was authorized by an act passed in December, 1717, which went into effect at once. These two acts were known as the "1st Long Bill" and the "2nd Long Bill," because the currency issued under their provisions was to be gradually redeemed during a period of about twenty years from the proceeds of taxes on the import and sale of beer, wine, and liquor.

[75] Fisher, *op. cit.*, p. 304.

[76] Parker, *op. cit.*, p. 153; *New Jersey Archives*, VII, 247; Phillips, *op. cit.*, p. 86.

[77] *Laws of 1769*, chap. dx.

In October, 1718, the Colonial assembly explained the background and effect of these two acts as follows:

> The Province laid then under the Burden of a Land Tax, for two fruitless (if not whimsical) Expeditions to Canada; and what Support the Government then had, was raised that Way [by a land tax], which . . . . was an Addition to that Burden, and made the raising of it difficult, occasioned by the Poverty of the People. . . . . However, to restore the public Credit, and add new Vigour to a then languishing Trade, we paid part of those Debts, and struck Bills of Credit to the Value of Twenty Seven Thousand Six Hundred and Eighty Pounds, for that Purpose, and have since paid the Remainder, amounting to about Sixteen Thousand Pounds more, for which Bills of Credit are also struck.
>
> The great Increase of the Trade and Oppulency of this Province, has been an Effect so visible of this Proceeding, that we are sure your Excellency [the governor] has not failed of observing it.[78]

The governor had already written to the British Lords of Trade a number of times explaining the beneficial results from the currency issued under the "1st Long Bill." In December, 1717, over two years after the issue of £27,680 under the "1st Long Bill" and before the "2nd Long Bill" was passed, he wrote

> . . . . At present I send the quarterly Accounts of the export and import by which their Lordships will observe how vastly increased the Navigation & Trade of this place of late, which in great measure is owing to the currency of bills of credit upon so good and solid fund as that of the excise, our bills being on the exchange of Boston 25 per Cent better than their own, I mention this because the bill for payment of the remainder of Public debts [the 2nd Long Bill], meets with some opposition or threatened opposition from men of private views, piques and interests, the true cause of which, whatsoever the pretended one be, is that this as the former did, incourages and enables the many to venture their stocks in trade to the prejudice of the few who had so long monopolized it.[79]

Early in 1718 the governor again wrote to the Board of Trade:

> I do affirm and believe your Lordships may have observed that since the circulation of those Bills [the 1st Long Bills] the Trade of the place has increased at least above ⅓ of what it was. The truth of the matter is, this circulation enables the many to trade to some small loss to the few who had

[78] *Journal of the Legislative Council of the Colony of New York, April 9, 1691, to September 27, 1743* (dated October 9, 1718) (Albany, 1861), p. 434.

[79] *The Documentary History of the State of New York*, ed. E. B. O'Callaghan)dated December 3, 1717), V (1855), 494.

monopolized it and that is the true cause of the cry if ever it should reach your Lordships ears. . . . .[80]

In August, 1718, he wrote that there had been a "vast increase of Trade & Shiping here" and that New York was then "the most flourishing of His Majesty's Provinces" and added:

I do affirm that this is at present the most flourishing Province in Trade & Creditt. Our Money Bills are now at least Thirty Per Cent better than those of New England on their own Exchange, and equall to Silver all round about us. The Trade of this place is increased most conspicuously, as the quarterly Accounts sent to the Lords of Trade will shew.[81]

Those who opposed the "2nd Long Bill" complained that it was causing all the currency of the colony to depreciate in value. Table 5 indicates roughly the course of the exchange on British

TABLE 5

EXCHANGE ON LONDON FOR £100 STERLING IN NEW YORK

1709–11	£150*	1737–39	£170
1714–17	160	1740	160
1723–34	165	1748	190

* New York currency.

sterling in New York City.[82] It would seem from the following statement by the British Lords of Trade that a rise of London exchange around 1717 also occurred in Pennsylvania, which had issued no paper money:

It must likewise be allowed that the credit of the [New York] Bills struck in 1714 may possibly be affected by the additional increase of those in 1717. The merchants have asserted to us that they are fallen about 9 or 10 per Cent, however as the Governor & Council have represented in their memorial that the difference between Gold in New York and Pensylvania (where there is no paper Credit) is but little more than ½ per Cent, and in Current Silver little or nothing and that the value of Silver varies as there is more or less Silver in that Province. We are apt to believe the merchants may be

[80] *Ibid.*, p. 500.

[81] *Ibid.*, pp. 514, 516.

[82] *British Board of Trade Papers: Plantations General*, Vol. XII, N 40, and J. H. Hickcox, *A History of the Bills of Credit or Paper Money Issues by New York from 1709 to 1789* (1866), p. 37. The governor of New York stated in May, 1724, that New York's "bills are now more valuable than they were upon their first making and are valued at par with the Coin of England which may thus be proved" (*New Jersey Archives* [1st ser.], V, 87).

misinformed or imposed upon in this particular as well as in several others that the discount on the Bills of Credit is not so inconsiderable as they imagine. . . . .[83]

All the available evidence indicates that New York did not suffer from the severe depression during the period from 1720 to 1723 as did the mother-country and the other colonies like Pennsylvania, Delaware, and Maryland, that had as yet issued no paper money, or New Jersey, where all previous currency issues had been retired. One searches in vain for some complaint to the Colonial legislature or to the British Board of Trade about economic conditions in New York at that period. The contrast between economic conditions in New York and in the other colonies mentioned is especially marked as the products and exports of Pennsylvania and New Jersey were much the same as those of New York. Indeed, as Table 6 indicates, the exports of New York to Great Britain fell off considerably from 1718 to 1723, but New York's imports of British goods held up remarkably well during the same period, while the imports of the other colonies from Britain suffered such a marked slump.[84] This would seem to indicate that trade in New York was flourishing while markets in neighboring colonies and abroad were in the doldrums.[85]

The optimistic statements of New York officials in the early 1720's are in sharp contrast to the pessimistic statements about business in Pennsylvania, New Jersey, Delaware, and Maryland made by officials in these latter colonies. In October, 1720, the new governor of New York spoke of the "flourishing state" of the province and added: "We live in the happiest of times."[86] In December, 1723, he spoke of "the success of [New York's] currency," which he thought was "much surer than Bankers Bills in

[83] Lords of Trade to the Lords Justices, June 4, 1719, in *Documentary History of the State of New York*, V, 526.

[84] See the previous article in the June, 1938, issue of this *Journal*, Tables 1 and 2, pp. 341 and 342, and the discussion, pp. 329, 342-43.

[85] Charles Whitworth, *State of the Trade of Great Britain in Its Imports and Exports Progressively from the Year 1697* (London, 1776), p. 65.

[86] Speech of William Burnet to the Assembly on October 13, 1720, in *Messages from the Governors, State of New York*, ed. Charles Z. Lincoln, I (Colonial period, 1909), 191.

London."[87] In November, 1724, the governor stated that New York's paper-money acts had been "of Service to the Trade of the Plantations and of great Britain" and added: "this manner of

TABLE 6

TRADE BETWEEN GREAT BRITAIN AND NEW YORK

(In thousands of British pounds sterling)

	Imports of New York	Exports of New York
1715	£ 54.6	£21.3
1716	52.2	22.0
1717	44.1	24.5
1718	63.0	27.3
1719	56.4	19.6
1720	37.4	16.8
1721	50.7	15.9
1722	57.5	20.1
1723	53.0	28.0
1724	63.0	21.2
1725	70.7	25.0
1726	84.9	38.3
1727	67.5	31.6
1728	81.6	21.1
1729	64.8	15.8
1730	64.4	8.7
1731	66.1	20.8
1732	65.5	9.4
1733	65.4	11.6
1734	81.8	15.3
1735	80.4	14.2
1736	86.0	17.9
1737	125.8	16.8
1738	133.4	16.2
1739	106.1	18.5
1740	118.8	21.5

compulsive credit does in fact keep up its value here and it occasions much more Trade and business than would be without it and . . . . all the merchants here seem now well satisfied with it."[88]

[87] Burnet to Lords of Trade, December 16, 1723, in *Documentary History of the State of New York*, V, 700.

[88] Burnet to Lords of Trade, November 21, 1724, in *ibid.*, pp. 736, 738.

In the middle of 1723 and 1724 there were two small issues of paper money of £2,140 and £6,630, respectively, to pay certain Colonial expenses, but it is noteworthy that there was no complaint about the condition of New York's trade in these acts or in the letters transmitting them to the authorities in Britain. Indeed, during the decade from 1724 to 1734 New York's money supply was not increased by additional issues of paper money. On the contrary, the New York currency in circulation was gradually decreasing in amount, as it was retired each year from the proceeds of the various taxes reserved for that purpose. By 1737 only about half of the £44,287 of currency issued in 1715 and 1717 still remained in circulation, and the currency of the neighboring colonies had become the chief medium of trade in New York.[89] Small change had become so scarce that coppers were imported from Britain at a profit.

Along with the other colonies, New York suffered from the depression of 1729; but the figures for New York's imports from Britain after 1729 compare very favorably with those of the other colonies,[90] despite the fact that the colony's exports to England, which were from one-third to one-half of New York's total exports, fell off very considerably after 1726 and 1727 (see Table 6). The "decay of trade" in Pennsylvania and other colonies during the early 1730's was discussed in the previous paper on currency in Colonial Pennsylvania and that discussion need not be repeated here. In April, 1734, we find the governor of New York reporting to the assembly that he has been informing himself of the declining state of trade "and of the discouragements it labors under, hoping that by discovering the causes of its decay [he] might find a remedy" which would "give life to the expiring hopes of ship carpenters and other tradesmen, recall their unwilling resolution to depart the Province, and encourage others to come into it."[91] In April, 1737, the governor again spoke of the "declining Trade" and the situation "whereby honest and Industrious Tradesmen [were] reduced to poverty for want of employ, and

[89] Hickcox, *op. cit.*, pp. 25, 27.

[90] See the previous article on Pennsylvania in this *Journal*, Table 2, p. 342.

[91] *Messages from the Governors*, I, 245–47.

many of them forced to leave us to seek their Living in other Countrys," which had caused real estate values and rents to decline.[92]

By the spring of 1737 the province was again in debt. The decline of trade had left the tax revenues insufficient to cover expenditures, so that the Colonial government was about £9,000 behind in salaries. In December, 1737, another paper-money act was passed authorizing an issue of £48,350, of which £40,000 was to be loaned through county loan officers to private borrowers at 5 per cent interest and the remaining £8,350 was to be used to pay off back debts. These loans were not to exceed £100 for each borrower and were to run for twelve years. The purpose of this "Loan Bill," as it came to be called, is well stated in the lugubrious language of its preamble:

Whereas by the Decay of Trade & other Difficulties which this Colony has the Misfortune to have Laboured under, So large a Deficiency has happened in the Funds granted for the Support of his majesties Government in & over the Same That not only the Salaries of the Officers But also the other Necessary Services thereof have been unpaid for the Space of Two years and upwards last past which this Colony in its present Circumstance with the Difficulties it still Labours under is unable to Discharge unless it be done by the means & in the manner herein after Mentioned, And in as much as there is Likewise a great want of a Medium as well to make Immediate payment of the Salaries & Services Aforesaid, as to Revive the Commerce, Trade and Navigation and Settlement thereof. . . . . it is hereby Enacted . . . . That bills of Credit to the Value of Forty Eight thousand three Hundred & Fifty pounds, Currant money of New York Shall FORTHWITH after the Publication hereof be Printed. . . . .[93]

In sending this act to the Lords of Trade the governor wrote:

. . . . There was no other possible way of discharging that load of debts which the insufficiency of the former Revenue had involved the Province in, Trade and Nagivation had for some years declined, and the Merchants of most wealth had chose rather to put their money to interest @ eight per Cent than to employ it in Trade, and ship building. Silver and Gold was sent to England, as fast as it came into the Country, to make returns to the Merchants who send goods hither to their factors, ... and leaving little paper money of our own that of the Neighboring Province was become the

[92] Speech of the Governor on April 5, 1737, in *Journal of the Legislative Council of the Colony of New York*, p. 676, and *Messages from the Governors*, I, 112.

[93] *Laws of 1737*, chap. dclxvi, passed on December 16, 1737.

chief mediam of Trade here. . . . . High interest is in every Country a great discouragement to Trade, and it has been so here. The Usurers your Lordships may be sure were not pleased with an Act which in its consequences might reduce the General interest of money, and they foresaw their money at Six per Cent from whence I promise myself the pleasure to see Trade and Ship Building revive and flourish. . . . . Your Lordships will perceive that in the striking this money, there is some regard likewise had to Trade in easing it of so much as the interest of £40,000 will amount to over and above £8,059 which is to be sunk by it; for imposts on Trade has hitherto had the whole charge of supporting the Governour. . . . . [94]

The effect of this loan issue of paper money on economic conditions in New York appears to have been very beneficial. The complaints about the "decay of trade" ceased, and in March, 1739, the governor spoke of those former years "when the Province was far less populous" and its trade "was much inferior to what it now is."[95] Table 6 indicates that the imports of British goods into New York increased greatly after 1736, although New York's exports to England failed to show any increase. Commenting on the "Loan Bill" and its economic effects, Professor Samuel McKee says:

The bill differed from its predecessors, in that it was not solely to defray the expenses of the colony. It was essentially monetary inflation, to stimulate languishing business. The law specifically said that the emission was to provide a circulating medium and "to Revive the Commerce, Trade and Navigation of the Said Colony and to promote the Improvement and Settlement thereof. . . . ."

The New York currency, in addition to the benefits already mentioned, provided the local government with an income from the interest. The interrelationship of currency, values and general business conditions is elusive and controversial where a wealth of data is available. Whereas it would be rash to estimate the interrelationship where scanty evidence exists, the assertion is warranted that the emission must have influenced strongly the economic life of New York. It may explain why wages and prices thereafter were generally higher in New York than in neighboring colonies.[96]

[94] *Documents Relative to the Colonial History of the State of New York*, VI (1855), 116.

[95] *Messages from the Governors* (speech by Governor George Clarks, March 27, 1739), I, 277.

[96] *History of the State of New York*, ed. Alexander C. Flick, chap. viii, "A Century of Labor," II (1933), 317–18.

In 1740 there were £79,754 of paper money outstanding in New York. From 1709 to 1740 a total sum of £142,407 had been issued and £62,653 had been retired from circulation and canceled.[97] No additional currency issues were authorized in New York after 1737 until the year 1746, when war commenced with the French and Indians. Between 1746 and 1760 all currency issues in New York were "for the King's use," and a total of £466,000 was issued during that fifteen-year period, all of it for fighting the French and Indians. The effect of these currency issues on the price level in New York is indicated by the ten-commodity index of the price level in New York constructed by H. M. Stoker.[98]

New York's price level in the early 1740's was slightly lower than in the early 1720's. One could say that during the twenty-five years following 1720 the trend of New York's price level was practically horizontal. But with the enormous issues for military purposes from 1745–60, the price level in New York rose a hundred per cent. From 1760 to the outbreak of the Revolutionary War, New York's price level again had practically a horizontal trend. Indeed, with the exception of the period of the French and Indian Wars (1746–60) New York had a very stable price level.

New York's experience with paper money over a seventy-five-year period was highly satisfactory and from all accounts the currency issues of 1715, 1717, and 1737 aided considerably in the colony's recovery from economic depression. John H. Hickcox, after a detailed study of the history of the colony's paper money concludes: "The whole amount issued in New York from 1709 to the last issue in 1783 was not large, and the special and repeated methods of taxation adopted for its extinction were as successfully carried out as the resources of the country would allow."[99] In 1768 the governor of New York wrote to England of the colony's currency: ". . . . They had allways kept up the credit of their

[97] *Board of Trade Papers: Plantations General*, Vol. XII, N 40.

[98] See *Wholesale Prices for 213 Years, 1720 to 1932* (Cornell University Agricultural Experiment Station, Memoir 142 [November, 1932]), pp. 215–16.

[99] *Op. cit.*, p. 49.

paper Currency and taken particular care it should not be depreciated."[100]

4. MARYLAND

When Maryland first issued paper money in 1733, most of it was given away—a certain sum to each inhabitant over fifteen years of age. This was done in order that the paper money might be "the more useful to the Inhabitants" and its circulation might be "as speedy and diffusive as possible."[101] For some years prior to this initial issue of paper money, Maryland had been experiencing "hard times," and the legislature hoped by this means "to remove the Difficulties under which [the inhabitants had] long laboured."[102] Tobacco, practically the only product of the colony, had been falling in value in world-markets.

Besides being the staple crop, tobacco was also, until about 1760, the principal money in Maryland. Since all debts were payable in tobacco, practically everyone in the colony grew some of it. The rate of exchange between tobacco money and coins varied, of course, with the price of tobacco abroad. Consequently, the exchange rate on England and other colonies fluctuated frequently.

In 1729 the governor of Maryland wrote:

> Money, or somewhat to answer its Current Effects in trade, is certainly much wanted here; wee may Barter between one Another our Staple Tobacco, but to Carry on and Inlarge our trade Abroad & to Invite Artificers, Shipwrights, etc. to Settle amongst us, another Species of Currency in payments, seems very desirable; New York, Pennsylvania, etc. are vastly improved in foreign Trade, as well as home Manufactures, by a Paper Currency; it is that, in lieu of Specific Coin, which seems, to give life, Expedition, and Ease to trade and Commerce. . . . . In Virginia and Maryland, the Case is much otherwise. . . . .[103]

Toward the end of 1729 the governor reported that the people were "impatient for some kind of Relief in their Circumstances."[104]

[100] Letter of Governor H. Moore, dated May 14, 1768, *Documents Relative to the Colonial History of New York*, VIII, 72.

[101] *Archives of Maryland*, XXXIX, 97.

[102] *Ibid.*, p. 92, and P. R. Kelbaugh, "Tobacco Trade in Maryland, 1700–1725," *Maryland Historical Magazine*, XXVI (March, 1931), 21.

[103] *Archives of Maryland*, XXV, 602.

[104] *Ibid.*, p. 603.

Two significant events took place in Maryland in 1729. In April the tobacco merchants in London wrote a long letter to the "Gentlemen and Planters of Maryland." Commenting that " 'tis a Pity your Industry should be your Ruin," the London merchants bluntly stated that the low price of tobacco was because "the Quantity of Tobacco imported into Great Britain, of late Years, has been more than all Europe doth consume within the Year, which leaving every Year a Stock of old Tobacco upon Hand, has clogg'd the Markets in Europe." The merchants suggested that the "first and principal" means of remedying matters would be "to lessen the Quantity" of tobacco produced.[105]

The second important event was the publication in the *Maryland Gazette* of the full text of Benjamin Franklin's "A Modest Enquiry into the Nature and Necessity of a Paper-Currency" with the editor's comment that Franklin's "Treatise [was] so nearly adapted to the Circumstances" of Maryland that its publication there just at that time should "be of Service."[106]

In May, 1730, the legislature spoke of "the melancholy and languishing Circumstances of our People" and the "great Decay of Trade."[107] The governor told the British Lords of Trade in August, 1731, that the income from raising tobacco had "for Several Years Past been really so very low that it would not supply the Inhabitants with One half of the Necessaries of Life."[108]

Late in 1731 the Maryland legislature passed an act to "ease" the inhabitants by an issue of £30,000 of paper money. The currency was to be issued in payment "for the Destruction" of tobacco during the month of July, 1732. For each 6,000 tobacco plants "left standing" the owner was to "burn and destroy" 150 pounds of tobacco "by reducing the same to Ashes." For every 150 pounds of tobacco thus "destoried" the government was to pay the owner 15*s.* of the new paper money. The paper money so issued was to be redeemed from the proceeds of special taxes on liquors, negroes, and Irish servants.

However, the paper money provided for in the currency act of

[105] *Maryland Gazette*, No. 83, April 8–15, 1729.

[106] *Ibid.*, No. 97, July 15–22, 1729. [107] *Ibid.*, No. 141, May 19–26, 1730.

[108] *Board of Trade Papers: Proprietaries*, Vol. XIII, S 23.

1731 was never issued and the tobacco was not destroyed in 1732. There was a provision in the act that it should not take effect until approved by the "Lord Proprietary" of the province. Doubting the propriety of this measure, Lord Baltimore withheld his approval.[109]

The legislature in Maryland was, of course, irritated by Lord Baltimore's failure to approve this paper-money act. In July, 1732, the lower house, "being of Opinion that a Paper Currency would Contribute to revive the Trade of this Province and to remove many of the Difficulties under which the People Labour," agreed that another paper-money bill should be introduced and passed.[110]

In the meantime, there was considerable discussion of the "present Languishing Condition of the province" and "the Unhappy State of its Trade."[111] The Colonial authorities wrote as follows to the British Lords of Trade in "A Short Account of the State of the Province of Maryland," dated March 1, 1733:

> The inhabitants of your Province still supply themselves with what Manufactures are needful for them from Gt. Britain only, so far as they can possibly find means to purchase the same, but the exceeding Poverty of the People in general, occasion'd by the low price of Tobaco, hath driven the poor Families to make some few course Woolens & Linnens, to Cloath Themselves, without which they must go naked.
>
> The Trade of the Province is of late years greatly decay'd, the Price of Tobaco for Several years being so low, that the Makers of it have been brought to the Want of many of the Necessaries of Life. . . . .[112]

When the legislature met on March 13, 1733, Lord Baltimore was visiting the province. In his address at the opening session of the legislature Lord Baltimore stated that "the bad State of Our Trade for some Years past hath laid this Province under the Greatest Difficulties" and that "tho many Expedients [had] been tried, the Evil" had not been "totally removed."[113] Within a

[109] Kathryn L. Behrens, *Paper Money in Maryland: 1727–1789* ("Johns Hopkins Studies," Vol. XLI [1923]), p. 15.

[110] *Archives of Maryland*, XXXVII, 394.

[111] *Ibid.*, pp. 4, 45, 47.

[112] *Board of Trade Papers: Proprieties*, Vol. XII, S 38.

[113] *Archives of Maryland*, XXXIX, 2.

month after this address a new paper-money bill had been passed by the legislature and approved by Lord Baltimore.[114]

This currency law, passed in April, 1733, differed from the 1731 act in that most of the paper money was to be issued as an outright gift to the inhabitants. This was done in order to distribute the currency as widely and as rapidly as possible so that the effects of its issue might be experienced in short order. Out of an authorized issue of £90,000, about £48,000 was thus given away as a "Bounty of Thirty Shillings per Taxable."[115] Most of the remaining £42,000 was loaned at 4 per cent interest, the loans to be secured by mortgages on real estate worth double the value of the loan, and the loans were to run for no more than seven years.

The law provided that the whole £90,000 was to be redeemed from a tax of 1*s.* 3*d.* levied on every hogshead of tobacco exported from Maryland. The proceeds of this new tax were to be forwarded to trustees in London, who were to invest these tax proceeds in Bank of England stock. This was rather easily accomplished, as Maryland, through tobacco exports, had a favorable balance of trade with Britain. At the end of fifteen years £30,000 of the paper money was to be retired, and in thirty years the remaining £60,000 was to be redeemed, from the funds invested in Bank of England stock.

"The better to prevent the Exportation of trashy, ordinary, and unmercantable Tobacco," the law of 1733 required every master or mistress of a family before July 1734 "to burn or cause to be burnt" 150 pounds of "the most ordinary Sorts of Tobacco" for every taxable.[116] The burning was to take place before appointed officials. A similar amount of tobacco (150 pounds per taxable) was to be burnt before the end of July, 1735.

The currency act of April, 1733, was to take effect just as soon as the paper money could be prepared, signed, and distributed

[114] Behrens, *op. cit.*, pp. 18–19.

[115] This included all freemen over fifteen years of age except ministers of the Church of England, imported male servants, and slaves over fifteen. The bounty, of course, was paid to the master or mistress of the family. According to a contemporary estimate, there were 75,000 whites and 21,000 blacks in Maryland in 1732 (*Archives of Maryland*, XXXVII, 588).

[116] *Ibid.*, XXXIX, 110.

either as a gift at the meeting of the next county court or as a loan at 4 per cent interest. Apparently, the effects of this paper-money act were soon felt. The governor of Maryland, in a letter of the Lords of Trade in October, 1734, speaks of "the Rise of [the price of] their Tobacco last Year," which caused the inhabitants again to import their necessities from Great Britain instead of trying to manufacture them in Maryland, as they had recently done.[117] George Chalmers, who spent ten years in Maryland prior to the American Revolution, says in his *Introduction to the History of the Revolt of the American Colonies:* "This measure introduced some good by feeding the flame of industry that began to kindle, and some evil by the injury done to creditors, to orphans, and to widows by its depreciation."[118] Apparently Chalmers was measuring the depreciation in the Maryland currency by its exchange value in terms of British pounds sterling rather than in terms of its internal purchasing power. Prices seem to have been no higher in Maryland in 1734 than in 1729, nor apparently did Maryland prices change relative to Pennsylvania prices between those two years. In September, 1734, as many as ten out of twelve commodities seem to have had the same prices in Pennsylvania and Maryland currency.[119]

With this issue of paper money there were really three monetary standards in Maryland: tobacco, coins (gold and silver), and paper money. But tobacco had the preference both by custom and by law. It was legal tender for all debts and public dues at all times. The use of paper money, on the other hand, was restricted. It was not legal tender for the payment of dues to the clergy, or of the quit-rents to the lord proprietary, or of fees to all the Colonial officers. These all had to be paid in tobacco. Paper money could be used to pay taxes and lawyers' fees only before the tenth day of April of the calendar year in which they were due.

[117] *Board of Trade Papers: Proprieties*, Vol. XIII, S 45.

[118] II, 160. This work was written in 1781 but was suppressed and was first published in 1845.

[119] See *Maryland Gazette*, No. 94, June 24–July 1, 1729, and No. 81, September 20–27, 1734; and Bezanson, Gray, and Hussey, *Prices in Colonial Pennsylvania* (1935), pp. 369, 374.

Undoubtedly, such restrictions on its use decreased the demand for paper money and prevented it from attaining a par with coin for the first twenty-seven years. In 1738 the Pennsylvania legislature pointed to "the Case of Maryland" as "a pregnant Example" of the truth that, "any restriction to confine or lessen its general use," will tend to lower the "Credit" of paper money.[120] A number of proposals were made in the Maryland legislature, especially in 1736, to demonetize tobacco by making paper money the only legal tender for levies and taxes, or for dues to the lord proprietary, or for officers' fees, or for clergymen's dues. But not one of these proposals passed the legislature. In 1739 the governor stated:

> I have the Pleasure of flattering my self, that my Endeavours have not been without some Success, but that both the Trade and Riches of this province have greatly increased during the time of my Administration [beginning in 1732], and I am perswaded they would have done so in a much higher degree, had our paper money been put upon that Foot of Credit which the Government laboured so heartily and sincerely to give it, and which could be done no other way than by putting it to as many uses as possible.[121]

Although before 1733 there were frequent complaints of the depression in trade, after the issue of paper money in 1733 such complaints as well as petitions for relief from debt seem to have ceased.[122] N. D. Mereness, in his book on *Maryland as a Proprietary Province*, states:

> .... About 1735, a marked industrial movement began. Hitherto, nearly all the people of the province had been engaged in the raising of tobacco, and their plantations lay, for the most part, along the banks of rivers or the shore of the bay, with little communication, except by water, between them. But now, as the remoter parts of the province began to be settled, wheat was raised, roads were cleared, bridges were built, towns sprang up, and the facilities for social and commercial intercourse were thereby greatly increased.[123]

From 1738 until 1748 the exchange rate on British pounds sterling was about 50 per cent above par (£133⅓ Maryland currency to £100 sterling), which meant that Maryland currency

[120] *Pennsylvania Archives* (8th ser.), III, 2468.

[121] *Archives of Maryland*, L, 386.

[122] Behrens, *op. cit.*, p. 45.

[123] *Op. cit.* (New York, 1901), p. 44.

was depreciated about one-third in terms of coin during this decade. In 1739 the exchange rate on Britain was £220 for £100 sterling, while in 1740 and 1748 it was £200 for £100 sterling.[124] In December, 1740, the governor wrote: "The Exchange has generally been for sometime past from £200 to £230 for £100 Sterling."[125] The colonists believed that this depreciation of the paper currency was due to the restrictions on its use.[126] In 1739 the governor said: "Our Paper Money not paying the Clergy and Officers, being the chief, if not only Reason of the present low State of its Credit."[127]

In 1748 the paper money rose to par in terms of sterling and was reported "as good as gold."[128] There were two reasons for this rise in its value. The act of 1747 increased the demand for paper money by making it legal tender for the payment of all fees and duties for those who did not grow tobacco. Also, in 1748 the supply of money was decreased, when, as provided by the law, one-third of it was redeemed from the fund in London. After 1748 the paper money never depreciated as it had before that year. During the decade from 1752 to 1762 its exchange value, measured in British pounds sterling, was about 10 per cent below par.[129]

The depreciation of the paper money from 1734 to 1748 and the slight depreciation from 1749 to 1762 were not due to a lack of sufficient "backing" for the currency. By the end of 1748 the fund in London amounted to £44,223 and the currency loans outstanding stood at £17,182, making a total sum of £61,405 with which to redeem the £30,000 of currency to be withdrawn from circulation in that year.[130] By 1764 the fund in London had grown so large that the colony had a sum of about £96,000 with which to redeem the remaining £60,000 of the £90,000 issue authorized in 1733. In other words, the "backing" exceeded the currency out-

[124] *British Board of Trade: Proprieties*, Vol. XIV, T 27; see also Hickcox, *op. cit.*, p. 37.

[125] *Ibid.*, Vol. XV, T 53.

[126] C. P. Gould, *Money and Transportation in Maryland, 1720–1765* ("Johns Hopkins University Studies," Vol. XXXIII [1915]), p. 89.

[127] *Ibid.*, p. 91. [128] *Ibid.*, p. 96. [129] *Ibid.*, p. 98. [130] *Ibid.*, p. 95.

standing by £36,000, or 60 per cent;[131] yet the exchange value of the paper money remained below par until a short time before the redemption of the remaining £60,000 of currency.

Though the paper money was given away so freely in 1733, there were no more issues of currency in Maryland until 1756—twenty-three years later—when £30,000 were put into circulation to help finance the French and Indian War.[132] This £30,000, however, was all to be redeemed and withdrawn from circulation within five years.[133] The next currency issues were in 1766, 1769, and 1773. Despite these later issues, paper money in Maryland remained on a par with gold and silver from 1764 until the outbreak of the Revolutionary War in 1776.[134]

The most prominent officials and merchants in the colony borrowed from the public loan office, established by the act of 1733. Interest receipts from the seven-year loans made by the loan office amounted to many thousands of pounds sterling, yet the losses from bad loans were negligible.[135] In his study of *Money and Transportation in Maryland, 1720–65*, Professor Gould states:

> Both as a business venture for the public and as a stimulus and aid to private industry the loan-office seems to have been an unqualified success. . . . .
>
> Considering the peculiar benefits to grain and tobacco culture, the conveniences offered to trade, the exceptionally high exchange that the bills maintained throughout most of their life, and the faithful redemption of every shilling at face value, it is hardly too much to say that this was the most successful paper money issued by any of the colonies.[136]

CONCLUSION

All the available evidence indicates that the early currency issues in these four colonies, as in Pennsylvania, helped to achieve the purpose for which they were put into circulation. In each case they did stimulate economic recovery from business depression, and did so apparently without any detrimental effects later on. In none of these colonies did one currency issue lead to another

[131] *Ibid.*, p. 105, and Mereness, *op. cit.*, p. 127.

[132] Gould, *op. cit.*, p. 102.

[133] Behrens, *op. cit.*, p. 39.

[134] *Ibid.*, pp. 55–56.

[135] Gould, *op. cit.*, p. 109.

[136] *Ibid.*, pp. 109–11.

until extreme inflation occurred. In Maryland, where most of the currency was given away in 1733, there were no further currency issues for the next twenty-three years. In all five colonies the price level seemingly was as stable prior to the American Revolution as it would have been had they remained upon a gold or silver standard instead of adopting a paper-money standard. Indeed, in Delaware, New Jersey, and perhaps New York, the price level was probably more stable than would have been the case had they been on gold or silver. Certainly, statistical evidence indicates that the price level in Pennsylvania from 1723 to 1776, when the colony was on a paper standard, was more stable than a gold or silver standard would have been,[137] and the price levels in Delaware and New Jersey seem to have corresponded very closely to Pennsylvania's price level; for Delaware and New Jersey currency apparently exchanged on a par with Pennsylvania currency most of the time from the 1720's until the Revolutionary War.

It is surprising to find upon investigation that the middle colonies were very successful with currency issues as prosperity measures and that their experience with a paper-money standard was remarkably good for over half a century. One looks in vain for any discussion of these satisfactory currency experiments in the standard works on American monetary and financial history.

Indeed, most writers play up the experience in the New England colonies, where currency depreciation was more extreme largely because of a peculiar currency arrangement. Until 1749 the paper money of New Hampshire, Massachusetts, Rhode Island, and Connecticut was freely accepted without discount in any other New England colony, some of them even accepting the paper money of neighboring colonies for tax payments.[138] As William Douglas put it, their currency was "promiscuously the same." This unusual arrangement led to competition between colonies in issuing paper money and hence to currency depreciation in New England. The little colony of Rhode Island issued so

[137] See the previous article on Pennsylvania in this *Journal*, pp. 370–71.

[138] A. M. Davis, *Currency and Banking in the Province of Massachusetts-Bay*, I (1901), 319, 361; and C. J. Bullock, *Essays on the Monetary History of the United States* (1900), pp. 209, 216.

much currency on loan at interest that at times over three-fourths of its paper money was circulating in other New England colonies, and the interest receipts on such currency loans easily paid all government expenses in Rhode Island.[139] Inhabitants of Massachusetts, observing that prices there were pushed up by Rhode Island's excessive issues, complained that the Rhode Islanders "reap all the Profit in our Ruin," and the governor of Massachusetts stated in 1741 that "the adjacent Colonies have flooded Massachusetts with their paper money, to the great profit of themselves, but to the greater detriment of our community."[140] The result was that Massachusetts, which between 1726 and 1741 had reduced its paper money in circulation by one-half, began to issue large sums of paper money in 1744, increasing the amount in circulation by almost five times during two years of war with the French.[141] It is this peculiar experience with competitive issues in New England which, for the most part, seems to have caused writers to conclude that early Colonial experience with paper money showed that currency inflation could not be checked, because one currency issue soon led to another.[142]

[139] "A Letter from a Gentleman in Boston to His Friend in Connecticut" (1743) reprinted in *Colonial Currency Reprints*, IV (1911), 224.

[140] William Douglas, "A Discourse concerning the Currencies of the British Plantations in America" (1740), reprinted in *Economic Studies*, II (American Economic Association, 1897), 344; and J. B. Felt, *An Historical Account of Massachusetts Currency* (1839), p. 111.

[141] A. M. Davis, Introd., *Colonial Currency Reprints*, I, 69, 98; and *Currency and Banking in the Province of Massachusetts-Bay*, I, Appen. E, 443.

[142] This bias against Colonial currency experiments is nowhere better illustrated than in A. B. Hepburn's *History of Currency in the United States* (rev. ed.; New York, 1924). On p. 8 he writes: "These [Pennsylvania] notes were intrinsically good, circulated freely at par, and drove the notes of other colonies out of circulation in Pennsylvania." This statement he contradicts on p. 10 where he says: "The course of events in Pennsylvania duplicates the experience of all other countries, as well as of the other colonies, and shows how inflation tends to grow with leaps and bounds, when once it gains a foothold." Finally, on p. 11 he reverses himself again and writes: "The notes of the colony of Pennsylvania suffered comparatively little depreciation."

WAGE-RATES, INVESTMENT, AND EMPLOYMENT

E. M. BERNSTEIN
University of North Carolina

I

NO REMEDY for depression has been more frequently urged than a general reduction in wage-rates. There are many businessmen and some economists who hold that when labor is unemployed it is because labor is asking too much for its contribution to production. It is not always clear how a general reduction in wages is expected to bring about an increase in employment. One basis for this view is the fact that a reduction in wage-rates in a particular industry results in a decline in costs and in prices in that industry, and induces an expansion of demand for its product. Disregarding the fallacy of composition, it is assumed that what is true of a reduction in wage-rates in one industry is equally true of a reduction in wage-rates in all industries.[1] The familiar reply to this analysis is that a general reduction in wages would diminish the income of the community and the demand for goods at a given level of prices, so that the volume of goods sold at lower prices would not be greater. There would then be no reason to increase production and employment.[2]

Recently Professor Pigou has presented the view that a general reduction in wage-rates would increase employment through its

[1] Even so eminent an economist as Edwin Cannan seems to have fallen into this error. "In a particular employment, provided demand for its product is elastic, more persons can be employed if they will work for less remuneration. In all employments taken together, demand is indefinitely elastic, and consequently indefinite numbers can be employed if they do not ask for too high a remuneration. General unemployment appears when asking too much is a general phenomenon" ("The Demand for Labour," *Economic Journal*, XLII [September, 1932], 367).

[2] "Let the reader observe that changes in the average rate of earnings have no direct tendency in themselves to bring about profits or losses, because—so long as the Currency Authority allows the change without attempting to counteract it—entrepreneurs will always be recouped for their changed outlay by the corresponding changes in their receipts, which will result from the proportionate change in the price level" (J. M. Keynes, *A Treatise on Money*, I, 167).

effect on real wages and the marginal product of labor. A reduction in money wages, he holds, will in the first instance reduce real wage-rates. With a reduction in real wages businessmen will extend employment to the level at which the new marginal product of labor is equal to the lower real wage-rates. Thus, according to Pigou, the effect of a reduction in wages on employment depends on the extent to which it brings about a decline of real wage-rates and upon the magnitude of the elasticity of demand for labor in terms of real wages.[3] Objection is also offered to this analysis of the manner in which a reduction in wages will increase the volume of employment. A reduction in wages, it is objected, cannot reduce real wage-rates, for any reduction in money wages would bring about a corresponding fall in prices, so that in fact real wage-rates would remain at the previous level.[4] It is not denied, of course, that it is possible to lower real wage-rates, but this cannot be done directly through a general reduction in money wages.[5]

In this paper two aspects of the relationship of wages to employment are considered: first, the effect of a general reduction in wage-rates during depression; second, the effect of a reduction in the relative wage-rates of those industries severely depressed. In this discussion the assumption is made that the community is in the midst of a period of depression, for when sharp recession sets in, admittedly a reduction in wage-rates may be of no use in halting the decline in production and employment. Nor is the discussion directed to the proposition that there may be a long-period

[3] A. C. Pigou, *The Theory of Unemployment*, pp. 100–102; "Real and Money Wage Rates in Relation to Unemployment," *Economic Journal*, XLVII (September, 1937), 405–22.

[4] "If labour were to respond to conditions of gradually diminishing employment by offering its services at a gradually diminishing money-wage, this would not, as a rule, have the effect of reducing real wages, and might even have the effect of increasing them, through its adverse influence on the volume of output" (J. M. Keynes, *The General Theory of Employment, Interest, and Money*, p. 269).

[5] R. F. Harrod, "Professor Pigou's Theory of Unemployment," *Economic Journal*, XLIV (March, 1934), 22–25; J. M. Keynes, "Professor Pigou on Money Wages in Relation to Unemployment," *Economic Journal*, XLVII (December, 1937), 743–45; Nicholas Kaldor, "Professor Pigou on Money Wages in Relation to Unemployment," *Economic Journal*, XLVII (December, 1937), 745–53.

level of employment that is not high enough to employ fully the available workers, so that regardless of wage policy some degree of unemployment will prevail. It is conceivable that "a completely rationalized world might turn out to be one in which, if organized so as to obtain their *de facto* economic worth, a certain proportion of workpeople could find employment at very high wages, while the remainder could hardly find it on any terms at all."[6] In such a community the unemployment that exists is not associated with depression. The question under consideration is whether during depression it is possible to raise the volume of employment to the long-period trend by a reduction in wage-rates.

In this discussion no allowance is made for the effects that have their origin entirely in previous expectations as to present movements in wages and prices or in present expectations as to future movements in wages and prices. Thus, if a reduction in wages leads to an expectation of a further fall in wages and prices, consumers and businessmen will be inhibited from consuming and investing at a level consistent with prevailing conditions. However, if consumers and businessmen have been postponing consumption and investment in anticipation of the current reduction in wages and prices, there will be a large increase in employment when the expectation is realized. And if consumers and businessmen are led to believe that any further change in wages and prices is likely to be upward, they may expand consumption and investment in anticipation of higher wages and prices in the future. Finally, no consideration is given to the possibility that if businessmen believe that a reduction in wages must lead to more profitable production, however unfounded their view, there will be an expansion of employment which will seem, through the effects it generates, to have been justified. The assumption throughout is that the direct and indirect effects of a reduction in wage-rates are those that follow from the altered economic situation brought about by the new wage-rates, without diminution or augmentation from the psychological reactions of consumers and businessmen.

[6] D. H. Robertson, *Economic Fragments*, pp. 50–51; cf. Joan Robinson, *Essays in the Theory of Employment*, pp. 105–38.

II

For the purpose of this discussion it is assumed that we are considering a closed economy, that all income is associated with private enterprise, that prime costs vary with wages, and that production takes place under competitive conditions so that price is equal to marginal prime costs. A general reduction in wage-rates would therefore reduce the marginal prime costs of production proportionately. For a short time after the reduction in wage-rates, prices are reduced proportionately and employment remains at the same level, businessmen not yet having found reason to expand production and employment. If the reduction in wages is to result in an expansion in employment, the volume of expenditure on consumption goods and on investment goods must decline less than in proportion to the fall in prices. Is this likely to happen?

The money income of wage-earners, and presumably their expenditure, still assuming the same volume of employment, will fall in proportion to the reduction in wages and prices. Consumption by wage-earners would therefore be unchanged. The money income of receivers of interest and rents, the bondholders, will remain the same, so that with lower prices their real income is increased. With a larger real income consumption by bondholders will be increased to some extent. On the other hand, the real net income of business enterprises will be diminished by precisely the same amount as the real income of bondholders is increased. If the net income of business enterprises were automatically paid out as income to their owners and became available for expenditure, a reduction in the real income of business enterprises would be followed by a contraction in consumption by their owners, the stockholders. If bondholders and stockholders are on the whole equally wealthy and equally disposed toward spending and saving, a shift in income from one group to the other would have little or no effect on consumption. If these conditions were in fact fulfilled there could be no net increase in consumption, and the volume of employment after the reduction in wage-rates would have to remain at the same level as before.

The validity of this analysis depends on whether, in fact, the net income of business enterprises is automatically paid out as income to their stockholders. American experience shows that, while the income of stockholders is ultimately derived from the net income of business enterprises, a given decline in business income is not accompanied by a corresponding decline in income distributed to stockholders. There is a tendency on the part of the directors of business enterprises to vary the payments to stockholders much less than the fluctuations in the net income of business enterprises. Thus, in 1929, when the net income of all business enterprises, including agricultural enterprises, in the United States was $20,894,000,000, the income distributed to their owners was $18,311,000,000; and in 1932, when the net income of all business enterprises in the United States had fallen to $1,888,000,000, the income distributed to their owners was still $10,830,000,000. Table 1 shows the fluctuations in the national income, in the net income of business enterprises, and in the income distributed to their owners from 1929 to 1936.

From 1929 to 1936, the ratio of the income distributed to owners of business enterprises to the income distributed to labor in industry, not including work relief wages and labor income from nonindustrial work, varied between 34 and 37 per cent. The indications are that in the short period the income distributed to the owners of business enterprises is more closely related to wages than to the net income of business enterprises.[7] It follows that a general reduction in wage-rates, the volume of employment remaining unchanged for the time being, would be accompanied by a proportionate reduction in the income distributed to stockholders. If the payments to bondholders remain constant, there would be an increase in their real income not offset by a corresponding reduction in the real income distributed to stockholders. If a part of this increased real income of bondholders were spent, there would be a greater purchase of goods

[7] Compiled from the data in *Survey of Current Business*, June, 1937, pp. 11–17. It is evident that at least for businessmen the disposable income does not depend on current business profits. Cf. D. H. Robertson, "Saving and Hoarding," *Economic Journal*, XLIII (September, 1933), 399–413.

after the reduction in wage-rates than before, and the initial assumption of a continuance of the same volume of employment would have to be modified. Businessmen would then find that they could maximize their income through an expansion of employment and production.

It has been assumed hitherto that all income is associated with private enterprise. In fact, of course, this is not so. One type of income not associated with private enterprise is that distributed by the government. How income from this source would be affected by a general reduction in wage-rates is not certain, but it is

TABLE 1*

INCOME IN THE UNITED STATES, 1929–36

(Millions of dollars)

	1929	1930	1931	1932	1933	1934	1935	1936
Income produced.....	80,757	67,969	53,499	39,545	41,813	49,575	54,955	63,799
Income paid out.....	78,174	72,872	61,551	48,487	44,907	51,004	54,645	62,056
Net income of business enterprises†.....	20,894	12,528	6,302	1,888	6,377	9,417	12,271	16,099
Distributed income of business enterprises‡	18,311	17,431	14,354	10,830	9,471	10,846	11,961	14,356
Business savings§.....	2,583	− 4,903	− 8,052	− 8,942	− 3,094	− 1,429	310	1,743

* Compiled from the data in *Survey of Current Business*, June, 1937, pp. 11–17.

† Including agricultural enterprises.

‡ Net dividend payments and entrepreneurial withdrawals.

§ Changes in earned surplus and proprietorship.

probable that it would not decline in proportion to the reduction in wages. If salaries in government employment were not reduced with industrial wages, the expenditure of the government would be decreased only to the extent that the materials it buys will fall in price. But even if salaries in government employment were reduced with industrial wages, the payment to government bondholders could not be decreased and would constitute a source of increased real income available for expanded consumption. If the government did not attempt to offset an immediate decline in tax receipts that might follow a reduction in wages by a policy of restrictive economy, the real income distributed by the government would be increased and with it the volume of consumption.

The magnitude of the direct effect of a given reduction in wage-rates on employment, through an expansion of consumption, de-

pends on the share of the national income that remains unaffected by the reduction in wages, on the proportion of the increased purchasing power of this share of the income that is spent on consumption, and on the elasticity of the demand for labor. Even a generous estimate of the magnitude of these factors shows that the increase in consumption following a moderate reduction in wages must be on a very small scale.[8] Unless augmented by indirect effects of the reduction in wages, it is not likely, therefore, that such a wage policy will result in a considerable increase in employment during depression. These indirect effects are dependent upon the stimulus to investment resulting from the initial increase in consumption and from the lower interest rates that may be brought about by a reduction in wages. It is through investment rather than through consumption that a reduction in wage-rates must act if it is to have a significant effect on employment.

III

When the capital equipment of a community has become adjusted to the lower volume of consumption during depression, any increase in consumption necessitates additional investment. In accordance with the principle of acceleration, the increase in investment will probably be on a larger scale than the expansion of consumption. And, if additional investment is undertaken, consumption and employment may be increased further through the action of the multiplier.[9] On the other hand, it is possible that the expansion of consumption resulting from the reduction

[8] For example: If 20 per cent of the national income is unaffected by a reduction in wages, if one-half of the increase in the real income of this share is spent, and if the elasticity of demand for labor is -2, employment will be increased by one-fourth of the relative magnitude of the wage reduction—a 12 per cent reduction in wages resulting in a 3 per cent increase in employment.

[9] The effect of the multiplier in increasing income depends on the expansibility of employment, and takes place only as time elapses during which production and consumption grow. Otherwise the saving accompanying an increase in investment will be induced by a shift in income to profits rather than by a growth in income. During a period of depression, the expansibility of employment is obviously large, so that if additional investment occurred, employment and income would be further increased. Cf. the paper by Fritz Lehmann in the National Industrial Conference Board's symposium, *The Economic Doctrines of John Maynard Keynes*, pp. 52–72.

in wages will not require additional investment in capital equipment. Thus, if the contraction of consumption during depression has taken place at a more rapid rate than the wearing-out of capital equipment, a moderate increase in consumption will result in a fuller use of existing capital equipment rather than in new investment. There can be no opportunity then for either the accelerator or the multiplier to augment the direct increase in employment brought about by the reduction in wages. During a severe depression it is very doubtful whether the capital equipment of a community has become adjusted to the lower volume of consumption. Under such circumstances, a considerable expansion in investment must be induced through some factor other than a moderate increase in consumption.

It is argued by Mr. Keynes and others that a reduction in wage-rates cannot increase employment directly through consumption, although it may increase employment through investment, if the reduction in wages results in a fall in the rate of interest.[10] This may occur in the following manner. The quantity of money needed in a community depends on the volume of production and consumption and on the level of prices and incomes. The quantity of money available in a community depends on the lending policy of the commercial banks, which in turn is related to the state of their reserves and the rate of interest. At lower wages and prices, if the volume of production and consumption is not immediately increased proportionately, the community will need a smaller quantity of money. Given the state of bank reserves, a decrease in the community's need for money must bring about a reduction in the demand for bank loans and in the rate of interest. At a lower rate of interest investment in capital equipment may

[10] "It is, therefore, on the effect of a falling wage- and price-level on the demand for money that those who believe in the self-adjusting quality of the economic system must rest the weight of their argument; though I am not aware that they have done so" (J. M. Keynes, *The General Theory of Employment, Interest, and Money*, pp. 266–67); see also the papers by Keynes and by Kaldor (*Economic Journal*, XLVII [December, 1937], 743, 745. Pigou also agrees that a reduction in wages must reduce the interest rate; but his pattern runs from lower wages to increased consumption, increased real income, and thus a lower rate of time preference (*Economic Journal*, XLVIII [March, 1938], 134).

become more attractive; and an initial expansion in investment may lead to a further increase in employment through the multiplier.

There can be no doubt that a fall in the rate of interest must have some small effect on the employment of labor, for at a lower interest rate the present value of the marginal product of labor relative to wages will be raised somewhat, and businessmen will be induced to expand employment until the present value of the marginal product has been reduced once more to the level of wages. However, it is not this inducement to expansion that is stressed by Keynes and others who regard wages as significant solely through their relation to the rate of interest. A reduction in the rate of interest is important, they hold, because it stimulates long-period investment in capital equipment. It is questionable, however, whether a moderate reduction in the rate of interest can have this effect in such periods of severe depression as give rise to a demand for a general reduction in wages. At such times some of the existing capital equipment is idle, which indicates that no positive return can be expected currently from the use of the equipment. It is difficult to see how a moderate reduction in the rate of interest can raise the profitability of investment sufficiently to induce businessmen to undertake considerable additional investment at such a time.

The fact is that a general reduction in wages, although not without some effect, is likely to have only a minor effect in increasing employment either through an increase in consumption or through an increase in investment. Because the favorable economic effects are likely to operate on a very small scale, and because there is a possibility of unfavorable psychological effects that may operate on a large scale, a general reduction in wages cannot ordinarily be regarded as a desirable remedy for unemployment.

The preceding analysis, it should be noted, is based on the assumption of a closed economy. To the extent that the economic system of a country is affected by international factors, a general reduction in wages in that one country is likely to have a greater effect on employment than has been indicated. When a severe

depression occurs in a gold-standard country during a period when the long-run trend of prices is downward, a general reduction in wages may be essential to the success of a program of recovery. Even in a country with a managed monetary system, some additional employment may result from the international demand for the country's output, although a general reduction in wages is likely to have a much greater effect on exchange rates than on employment.

IV

In recent discussions attention has been concentrated on the desirability of a general reduction in wages to the neglect of the proposition that employment may be increased by adjusting wage-rates to the demand for labor in particular industries.[11] Such a policy contemplates the reduction of wages in the depressed investment-goods industries, while wages in the consumption-goods industries would be permitted to remain at the prevailing level. The remainder of this paper is concerned with the effect on employment of a reduction in wage-rates in the investment-goods industries.

A period of depression is characterized by a falling-off in investment, and the necessary condition for recovery is a resumption of investment. During depression businessmen do not undertake a larger volume of investment because under given conditions of prices, wages, and interest rates, additional investment is unprofitable. More particularly, businessmen undertake investment in capital equipment up to the point at which the gross annual yield that may be expected from additional investment is equal to the gross annual investment cost. If the value of the annual

[11] In a discussion of remedies for unemployment nearly thirty years ago, Professor Pigou wrote: "For the purpose of the present chapter we take the existence of these fluctuations [in the demand for labor] for granted, and suppose that their magnitude and general character are given. There is no necessity that such fluctuations should involve unemployment: for the wage rate that work people ask for at every point in the industrial field might so vary in response to variations of demand that there were never anywhere more work people than employers were willing to engage" (*Unemployment*, pp. 75–76). It should be noted that the new Cambridge school of economists recognizes that a reduction in the relative wages of the investment-goods industries would stimulate investment (see Joan Robinson, *Essays in the Theory of Employment*, p. 44).

output resulting from the joint use of a marginal unit of capital equipment with its necessary complement of other factors of production is known, the gross annual yield is found by deducting from this value the factor cost, including the cost of materials and the additional remuneration necessary to induce businessmen to undertake the marginal investment. The gross annual investment cost is equal to the allowance for depreciation and the interest on the price of the unit of capital equipment. When it is profitable to undertake additional investment, it is because the gross annual yield is in excess of the gross annual investment cost of the marginal unit of capital equipment. Businessmen are then induced to expand investment until they have established equality of the expected gross annual yield and the gross annual investment cost at the margin of investment.[12]

In a period of depression, the gross annual yield of the marginal unit of the volume of investment that would be necessary to restore a high level of employment is below the gross annual investment cost. To induce businessmen to undertake the proper volume of investment it is necessary to raise the gross annual yield or to reduce the gross annual investment cost of the marginal unit of investment. Assume that for various reasons, including limitations placed upon action by the monetary authorities, it is not possible to raise the gross annual yield of investment to any great extent, and that it is therefore necessary to reduce the gross annual investment cost. So long as the gross annual yield of investment remains positive it is possible to bring about the proper volume of investment by a sufficiently large reduction in the gross annual investment cost. It must not be overlooked, however, that where the gross annual yield of the marginal unit of investment in capital equipment is currently zero, it is not possible to induce further investment in capital equipment by a reduction in the gross annual investment cost of additional investment.

[12] This analysis differs from the usual method of comparing the interest rate and the net yield on investment by excluding depreciation from noninvestment cost and including it in investment cost, of which it is logically a part. It follows from this change that gross annual investment cost must be compared with gross annual yield.

A reduction in the gross annual investment cost of a marginal unit of investment can be brought about by a lowering of the interest rate or by a lowering of the price of capital equipment. It is necessary, therefore, to compare the possibility of attaining a lower interest rate and its effect on the gross annual investment cost with the possibility of attaining a lower price of capital equipment and its effect on the gross annual investment cost. There is no doubt that some reduction in the interest rate is attainable in depression. The decline in investment and production during depression diminishes the demand for loans and induces a fall in the interest rate. Further, the action of the monetary authorities, through a policy of easy money, may induce a fall in the interest rate. However, a very low rate of interest may lead prospective lenders to prefer the holding of money to the holding of securities. And it is extremely difficult to act on the long-period interest rate by forcing down short-period money rates, for although the average rate of discount and the average rate of interest tend to be equal in the long run, the effect of a low current discount rate on this long-period average is not great.

The effect of a reduction in the interest rate on the gross annual investment cost will vary for capital equipment of different length of life. For capital equipment that will remain in use forever, the gross annual investment cost is equal to the interest on the price of the equipment. A reduction in the interest rate would therefore lead to a proportionate reduction in the gross annual investment cost. If the life of the capital equipment is limited to ten or twenty years, a reduction in the interest rate will have less than a proportionate effect on the gross annual investment cost, the annual depreciation cost not being diminished by a reduction in the interest rate. On the contrary, if the annual depreciation cost is calculated on a sinking-fund (compound-interest) basis, a reduction in the interest rate will increase the annual depreciation cost, although not by so much as it diminishes the annual interest cost. Thus, a reduction in the interest rate from 5 per cent to 3 per cent would reduce the gross annual investment cost of capital equipment of ten-year length of life from 12.95 per cent to 11.72 per cent of the price of the capital equipment, that is, by less than

one-tenth. For capital equipment of twenty-year length of life, a reduction in the interest rate from 5 per cent to 3 per cent would reduce the gross annual investment cost from 8.02 per cent to 6.72 per cent of the price of the capital equipment, that is, by less than one-sixth. Table 2 shows the gross annual investment cost of capital equipment of five-, ten-, and twenty-year length of life at interest rates from 1 to 8 per cent.

TABLE 2*

GROSS ANNUAL INVESTMENT COST PER CENT OF PRICE OF CAPITAL EQUIPMENT

(Interest and depreciation)

Interest Rate (Per Cent)	Five-Year Life	Ten-Year Life	Twenty-Year Life
1	20.60	10.56	5.54
2	21.22	11.13	6.12
3	21.84	11.72	6.72
4	22.46	12.33	7.36
5	23.10	12.95	8.02
6	23.74	13.59	8.72
7	24.39	14.24	9.44
8	25.05	14.90	10.19

* Depreciation is calculated on a sinking-fund (compound-interest) basis.

Assuming the same rate of interest, a reduction in the price of capital equipment must result in a proportionate reduction in the gross annual investment cost, for while this cost per cent remains the same, the price of capital equipment on which it is calculated is correspondingly lower. A reduction of one-sixth in the price of capital equipment would therefore be more effective in inducing investment than a reduction in the interest rate from 5 per cent to 2 per cent for equipment of ten-year length of life, or from 5 per cent to 3 per cent for equipment of twenty-year length of life, if the reduction in the interest rate were not accompanied by a change in the price of capital equipment. To induce a fall in the price of capital equipment it is necessary to reduce wages in the machine-making industries and in the industries supplying raw materials for the machine-making industries, principally steel. Because unemployment is unusually severe in the invest-

ment-goods industries it is not likely to be difficult to bring about a reduction in relative wages in such industries during depression. If the gross annual yield of capital equipment has not declined very much, it is very likely that a reduction in wage-rates, say of 20 per cent, would act as an effective stimulus to the resumption of investment during a period of depression.[13] It is needless to add that what is said of a reduction in wages in the machine-making industries applies with equal force to wages in the construction industries and in the construction-materials industries.

There is no intention in this paper to set up adjustments in relative wage-rates and in interest rates as alternative policies for inducing recovery from depression. On the contrary, those who favor a policy of wage reduction determined with reference to unemployment in particular industries ought at the same time to favor a complementary policy of reduction in interest rates. Whatever doubt one may have as to the favorable effects of a policy of reducing wage-rates in depressed industries or of a policy of reducing the interest rate on long-period loans, either policy being pursued alone, one cannot reasonably doubt that the two forces of wage and interest adjustment together would ordinarily be a powerful inducement to businessmen to increase investment during depression.

[13] The repercussions on consumption from a reduction in wage-rates in the construction and machine-making industries would not be great because only a small part of the working population is employed in these industries, while the indirect effect on employment through the multiplier would be an additional reason for stimulating investment through a reduction in wages and prices in the machine-making and construction industries. It may be noted that investment could also be stimulated by reducing prices and wages in those consumption-goods industries that are relatively large users of capital equipment. Such a policy may be objectionable because it would necessitate a long-continued shift in consumption in favor of the products of the machine-using industries.

THE UNION BANK OF LOUISIANA LOAN, 1832
A CASE STUDY IN MARKETING

R. W. HIDY
Wheaton College
Norton, Massachusetts

TO FILL one gap in the hitherto neglected historical analysis of the services and functions of international bankers, this paper presents a study of the technique of placing a specific American loan on the European market approximately one hundred years ago. It attempts also to determine generally the question of profit or loss to the marketing firms, to analyze the circumstances affecting the operation, and to assess the influence of the transaction upon the policy of the London firm directly responsible for selling the bonds. The material for this study is derived largely from the business correspondence of Baring Brothers and Company now in the Public Archives of Canada, Ottawa.

In many ways the history of the marketing of the Union Bank loan of 1832 serves as an excellent illustration of the activities of London merchant-bankers handling American bond issues during the 1830's. The loan was issued by the state of Louisiana as an aid to the establishment of a land bank, in itself a typical practice of southern states in a period of great agricultural expansion. The firm of Baring Brothers and Company, the leading merchant-bankers in Anglo-American trade at the time, could scarcely be excelled as a type. The contract provided for both a purchase on joint account and sales on commission, but the Barings exercised exclusive control over the sale of the securities. Finally, the loan, the largest single American issue placed by the Barings upon the European market prior to the *débâcle* of 1842, is important as marking some changes in the policy of the firm itself.

The Union Bank of Louisiana, chartered on April 2, 1832, and destined to become the model for other institutions of its kind

in the South, was a land bank aided by the issue of assignable state bonds. Its capital, nominally $7,000,000 but for which mortgages of $8,000,000 were given, could be subscribed only by citizens and landowners of Louisiana. The subscriptions to the stock, the shares being $100 each, were to be in the form of mortgages, against which as security the state was to issue the $7,000,000 assignable bonds to raise working capital. If property already mortgaged was offered in purchasing the stock, double the previous mortgage was to be deducted and only the residue could be used for the immediate purpose. Commissioners in each parish were to appraise property to be used as security either for stock subscription or for loans. The state was to be entitled to a credit of $500,000, and each stockholder could borrow a sum equal to one-half the value of his shares. Two-thirds of the capital was to be loaned on mortgage, the loans to be repaid in eight years by annual renewals and curtailments, and all of them to end with the twentieth year. The bond issue consisted of 7,000 bonds of $1,000 each, bearing interest at 5 per cent and being divided into four equal series maturing in twelve, fifteen, eighteen, and twenty years, respectively, half-yearly coupons being attached to each certificate.[1] One-sixth of the profits was to go to the state, the remainder to accumulate for the redemption of the bonds.

As soon as the books were opened, the stock of the bank was heavily oversubscribed. It was reported that citizens of the city of New Orleans subscribed $12,000,000 and those of the rural areas $25,000,000.[2] And slightly more than a month before the stock was thus taken, a contract providing for the marketing of the $7,000,000 bond issue had been signed by Prime, Ward, King and Company of New York and Baring Brothers and Company of London.

Experience had already taught the businessmen of Louisiana to seek English purchasers for local securities and to repose confidence in the two marketing firms. Through the medium of Prime, Ward, King and Company, Thomas Wilson and Company of London had purchased the bonds of the state assigned to the

[1] *Acts of Louisiana, 1832*, pp. 42–72.

[2] *Niles' Register*, XLIII, 131.

Bank of the State of Louisiana in 1824.[3] The Barings at one time considered taking the same loan, and at an earlier date had aided Vincent Nolte, a resident merchant, in making a loan to the city of New Orleans.[4] In 1829, when the $2,500,000 of bonds of Louisiana assigned to the Consolidated Association of the Planters of Louisiana were put up for sale, Thomas Baring personally conducted the negotiations for the purchase of them by his firm.[5]

Baring Brothers and Company first heard about the proposed Union Bank of Louisiana in the fall of 1831. The New Orleans firm of Gordon and Forstall wrote to the London house requesting advice as to the form the bonds should have. The Barings suggested only one change—that it should be provided that holders of the bonds should have the option of receiving interest payments either at New York or in London. Such a provision, they thought, would improve the marketability of the securities in England. Having said this much and no more, the Barings forthwith wrote to Thomas Wren Ward, their resident agent in the United States, "What is said of a new project of a Bank in New Orleans, the stock to be created by an issue of State Bonds?"[6]

Whether or not Ward was able to send full information, Baring Brothers and Company, when first approached as to the purchase of the loan by William McIlvaine, cashier of the Bank of the United States at Philadelphia, and by Ward, manifested scarcely lukewarm interest in the proposal. The Barings stated that if the officials of the Union Bank expected to obtain high prices for their bonds they were almost certain to be disappointed.

[3] W. G. Sumner, *A History of Banking in All the Leading Nations*, Vol. I.: *The United States* (New York, 1896), p. 244; *The Baring Papers, Official Correspondence* (hereinafter cited *BPOC*), Prime, Ward, King & Co. to M. Morgan (president of the Union Bank of Louisiana), January 22, 1833.

[4] *The Baring Papers, Miscellaneous Correspondence* (hereinafter cited *BPMC*), memorandum on the "Bank of Louisiana," 1824; V. Nolte, *Fifty Years in Both Hemispheres* (New York, 1854), pp. 297–99.

[5] *BPMC, passim;* L. H. Jenks, *The Migration of British Capital to 1875* (New York and London, 1927), pp. 76, 361, citing the *Times* (London), April 27, 1829.

[6] *The Baring Papers, Letter Book* (hereinafter cited as *BPLB*), Baring Bros. & Co. to T. W. Ward, September 29, 1831; Baring Bros. & Co. to E. Forstall, same date.

The bank was virtually unknown in England. Such a large new issue of Louisiana securities would depress the market, because the amount of the bonds of that state already held in the United Kingdom was large, and, in the opinion of the Barings, not safe to retain at prevailing prices. Furthermore, it would require at least three years to sell such a large amount. Baring Brothers and Company could not see their way clear to tie up so much capital for that length of time. Finally, it was expected that within a short time all fears of a European war over Belgian independence would be dispelled and "European stocks" would then "offer more encouragement to speculators than those of the United States."[7]

Quite contrary to these initial views, perhaps stated for bargaining purposes, Baring Brothers and Company very shortly after issued for the guidance of their agent in America detailed instructions for negotiating a satisfactory arrangement with the commissioners of the loan. Ward was ordered to try at first to interest the Barings, in conjunction with Prime, Ward, King and Company, in the loan to the extent of $3,500,000, at a price not above £22.10 per $100. The price was later raised to $113 per $100, if the contract should specify that the bonds should be redeemed at 4*s*. 6*d*. per dollar. If they were to be redeemed at 4*s*. 3*d*., then the limit should remain at $110.[8] If no firm wished to enter a joint engagement to float the loan, the Barings would be ready to take $3,500,000, provided that such part as the house did not contract for should not be brought to the English market before the expiration of 1833. At that time, also, Baring Brothers and Company should have the option of purchasing the remaining amount at the same price as paid for the first lot, "or to dispose of it on account of the Union Bank, charging in that case a commission of 2 pCt. on the proceeds of the sale." If the terms of the bidders did not meet the views of the commissioners, Ward was empowered to offer them $1,000,000 "to commence operations

[7] *Ibid*., Baring Bros. & Co. to McIlvaine, April 21, 1832; Baring Bros. & Co. to Ward, same date.

[8] *Ibid*., June 14 and 15, 1832; *BPMC*, Gowan & Marx (London bond brokers) to Baring Bros. & Co., June 26, July 21, 1832.

against[,] an equal amount of Bonds to be delivered to you for transmission to us and on which we should charge a Commission of 2 pr. cent. when realised." When one-half of that lot should have been sold, the Union Bank might send a further $500,000 of bonds, receiving a similar advance or permission to draw against it as might be desired, and so continuing until the whole of the issue was sold.[9]

On August 14, 1832, the negotiations were concluded with the signature of a contract in general conformity to the instructions of Baring Brothers and Company to their agent. The provisions of the document covered two separate categories of the $7,000,000.[10] In the first place, the commissioners acting for the Union Bank agreed to sell 5,500 of the bonds to the Barings and to Prime, Ward, King and Company. Of this amount the Barings were to take 3,700 and the New York firm 1,800. Payment for the bonds was to be made on delivery, with ten days' notice, at the rate of "106 1/14 dollars for every One hundred Dollars (100) of Bonds," delivery to be as follows—on November 1, 1832, $1,000,000, on January 1, 1833, $500,000, "and the balance in equal sums per month until the whole sum and the premium thereon be paid." The contractors were to have the privilege of receiving any amount of the bonds on demand, giving thirty days' notice, "such call not to be made before the first of January next, and all instalments to be paid within twelve months from the first payment." Payments for the bonds were to be made in New York, Philadelphia, or New Orleans, at the option of the purchasers.

A different arrangement for marketing the remaining 1,500 bonds was also included in the contract. These were to be consigned to Baring Brothers and Company "for sale on account and risk" of the Union Bank, the Barings not being obliged to offer

[9] *BPLB*, Baring Bros. & Co. to Ward, June 15, 1832.

[10] *BPOC*, Ward to Baring Bros. & Co., August 15, 1832 (and inclosures). Another copy of the contract and the powers of attorney for the Union Bank commissioners may be found in *BPMC*. Ward signed for Baring Bros. & Co., Samuel Jaudon and E. J. Forstall for the Union Bank, and Prime, Ward, King & Co. for themselves.

them for sale until the expiration of 1833. At that time, or at any time previously thereto, Baring Brothers and Company were to have the option of taking the securities on their own account, paying for them on the same terms as those mentioned for the first 5,500 bonds, "provided that if not taken for their own account within six months from the first day of November next," 1 per cent should be added to the contract price. If not previously taken for their own account, the Barings agreed to advance to the Union Bank, on the security of the foregoing bonds, $500,000 on or before June 1, 1833, and a further sum of $500,000 at the expiration of 1833. In case such advances should be made, the London firm was not to be restricted as to the selling price of the bonds for reimbursing itself "after making every effort" in its power "to obtain such limits as the Bank may think proper to fix." On such sales the commission of the Barings was to be 2 per cent on the sterling amount.

The contract also provided that the indorsement on the bonds should specify that the principal should be reimbursed at the counting-house of Baring Brothers and Company, London, at the rate of 4*s*. 3*d*. per dollar, the interest to be paid at the same place at the rate of 4*s*. 6*d*. per dollar. The interest was made "payable the first day of February and the first day of August in each and every year," rather than on January 1 and July 1, as was usual. The commission of the Barings for these services was to be one-half of 1 per cent on both the sterling amount of the interest and the principal reimbursed.

In receiving and paying for the bonds the contractors took advantage of the alternatives contained in the contract. On the 5,500 lot, 1,000 were delivered on November 1, 1832; 500 in each of the following two months; 1,000 again on February 1, 1833; 300 in each of the succeeding seven months; and the final group of 400 on October 1, 1833. The bonds were sent to New York and forwarded thence by packet ships to the Liverpool branch of the Barings. On several occasions the Merchants Bank, the New York agent of the Union Bank, acted as the intermediary in the transfer of the securities to Prime, Ward, King and Company.

Payments on this lot were made in all three cities mentioned in the contract.[11] But since the Barings chose to receive the remaining 1,500 bonds on consignment from the Union Bank, accepting a commission of 2 per cent on the sale thereof, that group was sent directly to Liverpool from New Orleans, and the Union Bank secured the $1,000,000 advance to which it was entitled by selling in the American market sixty-day sight drafts on the London house.[12]

Although the entire issue was to be sold through the Barings in London, even before the sale of the bonds was begun the contractors had reduced their risks in the operation. Of the 1,800 bonds allocated to them, Prime, Ward and King[13] had sold at cost 1,000 to three New York firms—J. D. Beers and Company, John Ward and Company, and J. L. and S. Joseph and Company. After paying in cash the premium of $6\frac{1}{4}$ per cent (equaling approximately $67,142), the purchasers, through the medium of Prime, Ward and King, consigned the bonds to the Barings for sale. The securities were to be held at limits not "above 104 per cent" for three months after the maturity of the bills drawn by Prime, Ward and King upon the London firm in transferring funds to the United States. After that period had passed, in order to reimburse themselves, Baring Brothers and Company might accept the market rate. One per cent commission and the brokerage incurred was to be charged on the proceeds of the sale, the commission to be divided equally between the two contracting

[11] See *ibid.*, Ward to Baring Bros. & Co., September 20, 1832, March 1, April 13 (and inclosures), May 23, 25, June 28 (and inclosures), 1833; Prime, Ward, King & Co. to Baring Bros. & Co., December 15, 22, 31, 1832, January 15, 22, 28, 31, February 19, March 1, 7, 15, 16, 30, April 9, 23, 30, May 31, June 22, July 31, September 7, 30, 1833; Ward to Perrault, cashier of the Union Bank, May 23, 1833; *BPMC*, S. Jaudon to Ward, May 24, 1833.

[12] *BPOC*, Ward to Baring Bros. & Co., March 4, 18, April 13, June 28 (and inclosures), July 7, 30, August 17 (and inclosures), 29, October 4, 1833; Prime, Ward, King & Co. to Baring Bros. & Co., March 7, May 23, 1833; *BPMC*, Perrault to Baring Bros. & Co., November 5, 29, 1833.

[13] The name of the New York colleague of the Barings was changed in November, 1833, to Prime, Ward & King, in accordance with a recently passed New York state law providing that the term "company" should not be included in the name of a firm if all the partners were therein enumerated.

firms. This was carried as "Account S" on the books of the Barings.[14]

That left 4,500 out of the original 5,500 purchased to be sold at the risk of the two contracting firms—800 on account of Prime, Ward and King and 3,700 on account of Baring Brothers and Company. But the London house had also reduced its stake in the transaction, although the whole group was carried on the books as "Account L." T. W. Ward, at his own request, was allocated 200 bonds for his own account. And even before the contract of August 14, 1832, was signed, Gowan and Marx, London bond brokers, had agreed to subscribe for 1,000 bonds at cost—500 for themselves, 400 for Thomas Biddle and Company of Philadelphia, and 100 for G. Marx and Son of London. Gowan and Marx, holding themselves responsible for the latter two firms, agreed that all shares should be sold through Baring Brothers and Company.[15] Thus, several parties were materially concerned that profit should accrue from the operation.

The object of the contractors was to sell the bonds in London at as high a price as possible while transferring the necessary funds to the United States at as high a premium on sterling as possible. Leaving for later discussion the sale of the bonds, in its simplest form the plan of the contractors for raising funds in the United States to pay the Union Bank involved the sale of bills on Baring Brothers and Company for the entire amount of the loan. A part would be drawn by Ward, a part by Prime,

[14] *BPOC*, J. D. Beers & Co. *et al.* to Prime, Ward & King, October 29, 1834; Prime, Ward, King & Co. to Baring Bros. & Co., August 23, 1832; Prime, Ward & King to J. D. Beers & Co. *et al.*, December 3, 1834.

The arrangement resulted in a slight gain to Prime, Ward & King without taking into account the commission mentioned above. The firm received from the three New York purchasers the premium of $6\frac{1}{4}$ per cent on the bonds, which equaled about $67,142. £212.10 for every $1,000 bond at 108 per cent exchange produced about $1,020 or $1,020,000 for the total. Since the bonds cost $1,067,142 and Prime, Ward & King received $1,020,000 plus $67,142 for them, that firm netted an immediate balance of approximately $20,000 upon which the firm had to pay $4\frac{1}{2}$ per cent interest to the "constituents." But it still profited even on that, inasmuch as the Barings contracted to pay 5 per cent on balances in London.

[15] *BPMC*, George Marx to Joshua Bates, June 14, 1832; Gowan & Marx to Baring Bros. & Co., June 26, 1832. Gowan & Marx understood that the Barings should not charge them any commission on sales effected in London.

Ward and King, and $1,500,000 by the Union Bank. [15]Of the entire amount, the Barings were responsible for furnishing immediately all but the amount of the premium on 1,000 bonds paid by the three New York firms and the amount, if any, paid by Gowan and Marx.[16]

The contractors did endeavor, through the sale of exchange, to aid in producing a profit on the purchase of the 5,500 bonds. An example may be cited in the very early stages of the operation. On the day the contract was signed, Ward announced to the Barings that he had sold three sterling drafts on the firm to Goodhue and Company of New York.[17] That firm, desiring to establish with the Barings a balance upon which sterling drafts in turn might be sold in the United States or debts be paid abroad, paid Ward in dollars for the drafts on the London firm. Ward's letters did not mention the exchange rate, but during 1832 and 1833 the pound was usually quoted at a premium of approximately 8 per cent. The legal value of the pound sterling in paying customs duties to the government of the United States being $4.44, its value in the American money market was therefore $4.44 plus 8 per cent of $4.44.[18] Should the bonds be sold at the purchase price, the contractors for the loan could expect at that rate to make a profit of 8 per cent on their investment, less costs of transportation of the bonds and of negotiation of the bills. And a very large proportion of the exchange necessary for paying for the 5,500 bonds was sold at approximately 8 per cent premium on sterling by Ward to Goodhue and Company and by Prime, Ward and King in the New York money market.

In the absence of exact accounts, however, several circumstances complicate any attempt to estimate the amount of suc-

[16] No mention of any payment is made in any of the letters examined, and the Barings said that they had to furnish all the funds (*BPLB*, Baring Bros. & Co. to Ward, November 22, 1834).

[17] *BPOC*, Ward to Baring Bros. & Co., August 15, 1832. The Barings permitted their agent to sell his drafts on them only to firms remitting the bills directly to their house, thus avoiding the appearance of "agent on principal" in either the New York or the London money markets. The Barings did not discount their bill remittances.

[18] See *Hunt's Merchants' Magazine*, I, 167–68. Bills on the Barings often sold at higher than market rates.

cess on this side of the venture. For one thing, the cash payment of the $67,142, the premium on 1,000 bonds taken by the three New York firms, lessened by that much the amount of exchange that needed to be sold. Second, though no limits other than face value were placed on the drafts against the 4,500 bonds on "Account L," the Barings permitted Prime, Ward and King to draw only £212.10 per $1,000 bond on "Account S."[19] Other measures, such as the sales of other American securities in the American market in order to raise the needed funds, prevent any attempt to estimate the amount of exchange sold.

Nor were these the only variations from the simple scheme first envisaged for transferring funds from London to the United States. At least two other considerations led to modifications and alterations. The contract provided that $7,000,000 should be transferred to the account of the Union Bank during the exact period that the Barings had agreed to tie up at least five millions in handling the operation of the United States 3 per cent bonds for the Bank of the United States. What amount of money could the London house comfortably afford to send to America under those circumstances? Granted the issuance of $7,000,000 in drafts over and above the usual number against remittance of other securities and shipments of merchandise, the question also arose as to whether the American market could absorb, at the specific times needed to meet payments to the Union Bank, all the sterling bills thus created without causing a decline in the exchange on London. To obviate these risks the contractors modified their original program.

Assistance was sought from the institution with which Baring Brothers and Company were already largely engaged—the Bank of the United States. The London house, in its instructions to Ward in June, 1832, had pointed out that the aid of the Bank of the United States through crediting the account of that institution "at a fix'd sum in Stg. for any payment you may have to make for us will give you a facility which none of your competi-

[19] *BPOC*, Prime, Ward, King & Co. to Baring Bros. & Co., August 23, 1832, January 7, 1833. At $4.44 per pound sterling, $1,000 equals £225.10.

tors on this side will possess."[20] The matter was clinched in the fall of the year. Biddle stated, in the letter altering the arrangements regarding the "deferred and postponed three per cents," that in order to provide funds in New Orleans to make the payments to the Union Bank, the whole amount expended for "purchases of the three per cents., or any portion of it," might be considered by the Barings as immediately applicable to that object, if it should be found desirable.[21]

The bank rendered assistance in at least three ways. First, in order to raise the residue of the sum needed to pay the first $1,000,000 on November 1, 1832, an arrangement was made that the bank should place in New Orleans $384,000, exchange at 8 per cent premium for sterling, as an equivalent to £80,000 which was to be credited to account of the bank with the Barings in London.[22] Second, to enable the two purchasing firms to make the second $1,000,000 payment on February 1, 1833, the bank bought from Ward a sterling bill of £160,000, exchange at 8½ per cent premium for sterling, for $771,555.55.[23] In both cases provision had already been made by normal sales of drafts, largely by Prime, Ward and King, for the remainder of the amounts. That Ward drove good bargains meriting the approval of the Barings is indicated by the fact that in both these early transactions, in order to arrive at the foregoing sums in dollars, the pound sterling was calculated, not at $4.44, but at $4.4444444 in the first instance and at $4.44444444 in the second.[24] Such shrewdness meant an advantage of several hundred dollars to the contractors of the loan.

Third, beginning in February, 1833, and continuing every month until October, the Bank of the United States loaned the purchasers money, either for the whole or for parts of the pay-

[20] *BPLB*, Baring Bros. & Co. to Ward, June 15, 1832. Thomas Wilson & Co. also made overtures for the purchase of the loan.

[21] *House Report* (22d Cong., 2d sess.), No. 121, p. 118.

[22] *BPOC*, Ward to Baring Bros. & Co., September 20, 1832.

[23] *Ibid.*, January 22, 1833. For the preliminary negotiations see *BPMC*, S. Jaudon to Ward, January 10, 1833.

[24] The Barings did approve (*BPOC*, Ward to Baring Bros. & Co., April 4, 1833). The calculations were made by the author.

ments, on promissory notes. Ward, as agent of the Barings, signed the notes jointly with Prime, Ward and King.[25] The note signed in February for the March payment was paid in May. The April, May, June, and July notes were canceled on August 2 when the bank purchased of Ward a bill on Baring Brothers and Company for £221,881.9.8. This sum was equivalent at 8¼ per cent premium on sterling to $1,067,496.47, representing the total principal of the notes plus interest at 5 per cent from their respective dates to October 1, 1833. The bill was not to be sent to London until the October 1 packet sailed. At the same time, it was arranged that the Bank of the United States should make the last three payments to the Union Bank, accept joint notes as before, and await reimbursement until the end of the year. On October 4, 1833, the two firms, having effected the sale of several drafts, owed the bank at Philadelphia $988,778.20, all of which the contractors expected to pay easily by January, 1834.[26]

Before January 1 was reached, however, the clever schemes of Ward had gone awry in at least one respect. That borrowing money from the bank would avert any embarrassment to the Barings which might develop as a result of the altered arrangements in regard to the postponed and purchased 3 per cents, had been suggested by Ward late in May. He also contended that it would enable money to be raised in the United States at the convenience of the contractors, that it would give additional time "to realize from the Bonds without any heavy advances," and that it would give the purchasers of the loan an opportunity to take advantage of an expected rise in the premium on sterling.[27] Everything worked satisfactorily except the expected trend of exchange on London. In September, President Jackson ordered the distribution of public funds among the "pet banks," commodity and security prices began to decline, the Bank of the United

[25] *Ibid.*, February 19, 28, March 1, May 14, June 20, 28, August 4, September 7, October 4, 1833.

[26] *Ibid.*, August 4 (and inclosures), October 4, 1833.

[27] *Ibid.*, May 21, 1833. Since the bank was not drawing against its £250,000 open credit with the Barings at the time, Ward estimated that the borrowing arrangement in August was "equivalent to an abeyance" of about $2,250,000 (*ibid.*, August 4, 1833).

States contracted credit to an extraordinary degree, and cotton bills came into the market in large numbers in a very short time. The premium on sterling dropped from 7 per cent during the first week in November to 4 per cent and no demand by December 23.[28]

Both Ward and Prime, Ward and King were in a quandary as to what should be done. During the third week of October they considered the advisability of selling drafts immediately to raise the necessary funds but did nothing at that time. By November 7 such operations were begun, payment being received in notes "equal to cash on or about" January 1, bearing 6 per cent interest. Prime, Ward and King assumed responsibility for the notes taken by them, and found consolation in the fact that 7 per cent premium had been paid on their bills at a time when the market rate was only 6½ per cent. Within one more week the New York firm was apologizing for overriding the objection normally made by the Barings to bills passed at more than sixty days' sight, but the absence of "cash demand" seemed sufficient justification for selling 90-day drafts.[29] Ward, by his own confession, "mortified" at the necessity of drawing at such a low rate of exchange on London and remembering an expedient utilized to meet a part of the May payment, suggested that the Barings send to America some United States 4½'s and 5's, Mexican dollars and five-franc pieces. Prime, Ward and King added New York State 5 and 6 per cent bonds to the list of suggestions.[30]

Ward's perturbation would seem to have been slightly more

[28] See W. L. Thorp, *Business Annals* (New York, 1926), p. 121; *BPOC*, Ward to Baring Bros. & Co., November 7, 1833; Prime, Ward & King to Baring Bros. & Co., November 7, 15, 23, 30, December 22, 23, 1833.

[29] *BPOC*, Ward to Baring Bros. & Co., October 21, November 7, 1833; Prime, Ward, King & Co. to Baring Bros. & Co.. October 19, 1833; Prime, Ward & King to Baring Bros. & Co., November 7, 15, 1833.

[30] *Ibid.*, Ward to Baring Bros. & Co., November 18, 21, December 22, 1833; Prime, Ward & King to Baring Bros. & Co., November 23, 1833. The Barings had sent New Orleans 7 per cent and Baltimore 5 per cent bonds to be sold in the United States, the proceeds to be applied to the payments to the Union Bank. Thomas Biddle & Co. of Philadelphia were intrusted by Prime, Ward, King & Co. with the sale. In July the New York house reported that $220,000 of the Baltimore bonds had been sold. The proceeds of the New Orleans bonds were later directed to be applied to the debt to the Bank of the United States (*ibid.*, Prime, Ward, King & Co. to Baring Bros. & Co., April 30, May 7, July 6, October 8, 1833).

acute than the exigencies of the situation required. By the sales of some New York 5 per cents sent out by the Barings, and by a few scattered sales of drafts, the amount yet to be provided for the payment to the bank, according to Ward's own estimate of December 23, had been reduced to about $220,000.[31] The amount "provided" included the notes taken in payment for drafts, not all of which could be collected on January 1, 1834. In the meantime, the Bank of the United States had offered to extend that part of the debt remaining unpaid on January 1 for another ninety days. The overture was gladly accepted. After $90,000 had been paid to the bank on January 15 and 16, the joint indebtedness of the purchasers of the Union Bank loan still stood at $245,000.[32] Under gradually improving business conditions and with the maturing of notes taken for exchange, the payment of a sum of that size could be of no great concern to either of the two firms involved.

Most important from the point of view of one interested in estimating the gain produced by the transfer of the $5,500,000 to the United States is the fact that, in part at least, the plans of the purchasers of the bonds were not realized. Considerable sums were paid to the Bank of the United States in the form of interest, and no small amount of sterling bills was sold at less than the anticipated 8 per cent premium. Much the same relatively disappointing result, though merely a small miscarriage of plans, attended the second avenue for producing a profit upon the transaction—the sale of the bonds themselves. Throughout the sale the Barings had to keep in mind the three categories of "Union Bank bonds"—those on "Account L," those on "Account S," and those sold at the risk of the Union Bank itself.

The sale of the bonds started very auspiciously. Even before the contract had been signed in the United States, Thomas Cotterill of Birmingham had agreed to buy $50,000 of the securities at 1 per cent above the purchase price. One of Cotterill's friends,

[31] *Ibid.*, Ward to Baring Bros. & Co., December 22, 23, 1833; Prime, Ward & King to Baring Bros. & Co., December 23, 1833. The New York house estimated that only $215,000 remained to be provided.

[32] *Ibid.*, November 30, December 23, 1833, January 16, 1834; Ward to Baring Bros. & Co., December 22, 23, 1833, January 7, 16, 1834.

John Ferguson, also requested from $20,000 to $25,000 of the bonds.[33] Then the Barings, after learning that the contract had been signed by Ward, in October, 1832, announced a public subscription sale of "Union Bank bonds" for future delivery. The buyers at this time were to take equal portions of the four series (maturing in 1844, 1847, 1850, and 1852, respectively), the bonds to be paid for in instalments of

£40 per bond of $1,000 on Monday, October 15, 1832
£40 per bond of $1,000 on Tuesday, January 15, 1833
£40 per bond of $1,000 on Friday, March 15, 1833
£64 per bond of $1,000 on Monday, April 15, 1833
£50 per bond of $1,000 on Monday, June 17, 1833

The sale price, therefore, was £234 per bond, or approximately 104, regarded by Cotterill as too low. Those subscribers who might desire to anticipate payments, with discount at 4 per cent, might receive letters of engagement from Baring Brothers and Company promising to deliver the bonds subscribed for as soon as possible. The securities were to bear interest for the subscribers from February 1, 1833.[34] In this way $1,728,000 worth of bonds was sold, a large advance sale which it was hoped would cause the price to rise. Only those on "Account L" were included in the sale because Prime, Ward and King did not specify a price limit for those in the first consignment on "Account S."[35]

Cash sales proceeded very slowly for the next ten months. None at all was recorded until April, 1833. Even then the market was so slack that the Barings suggested a revision of the arrangement with the three New York purchasers, but Prime, Ward and King thought it unnecessary. Ward, perceiving the situation, strenuously urged the sale of the remainder of the 200 bonds, held in his name by the Barings, "at not less than cost," but dis-

[33] *BPMC*, Thomas Cotterill to Baring Bros. & Co., August 4, 1832; John Ferguson to Baring Bros. & Co., September 20, 1832.

[34] *Ibid.*, Cotterill to Baring Bros. & Co., October 8, 1832; *The Baring Papers, Printed Documents* (hereinafter cited *BPPD*), printed announcement by Baring Bros. & Co.

[35] *BPLB*, Baring Bros. & Co. to Prime, Ward & King, January 22, 1835; *BPOC*, Prime, Ward, King & Co. to Baring Bros. & Co., November 19, December 7, 1832, January 7, 1833.

covered that no market could be found in England at that price. Prime, Ward and King finally took them off his hands at the price he desired. Under these circumstances it is not surprising that Baring Brothers and Company heeded Ward's suggestion in the summer of 1833 to sell at the market price and thereby disposed of 1,000 bonds.[36]

Two other expedients—one a success and one a failure—were tried before the bonds on "Account S," which could be disposed of only for cash, could be closed out. After the idea had been suggested a number of times by both Ward and Prime, Ward and King, the Barings agreed that a small amount of the bonds should be temporarily retained for sale in the New York market.[37] The scheme neither succeeded, as it was hoped, in buoying up the market for Louisiana bonds, nor resulted in any recorded sales. Baring Brothers and Company, more than a year after this unsuccessful venture, did experience a modicum of success in the Dutch market. Hope and Company took over some of the bonds in the summer of 1834 and effected a number of sales in Holland before the end of the year.[38] Yet it was in London, during January, 1835, that "Account S" was closed by the sale of 445 bonds at par.[39]

The bonds on consignment from the Union Bank, for which cash was also to be realized, displayed the same sluggishness in moving through the hands of Baring Brothers and Company. The bank had set "99 per cent ex. interest" as the lowest limits

[36] *BPOC*, Prime, Ward & King to J. L. & S. Joseph & Co. and J. D. Beers & Co., December 17, 1834; Prime, Ward, King & Co. to Baring Bros. & Co., May 23, 1833; Ward to Baring Bros. & Co., May 22, July 9, August 1, 5, 13, 1833. The Barings specifically mentioned that the decision to sell was due to Ward's views on the matter. The market rate, though not disclosed, was obviously below 104.

[37] *Ibid.*, Prime, Ward, King & Co. to Baring Bros. & Co., December 7, 1832, January 7, 23, 1833; Ward to Baring Bros. & Co., January 22, 28, February 5, April 13, 1833.

[38] *BPLB*, no heading, July 1, 1834; Baring Bros. & Co. to Hope & Co., July 11, 1834; Baring Bros. & Co. to Prime, Ward & King, August 1, September 29, October 6, November 14, 1834.

[39] *BPOC*, Prime, Ward & King to Baring Bros. & Co., December 26, 1834; *BPLB*, Baring Bros. & Co. to Prime, Ward & King, January 30, 1835. In London as of October 2, 1834, 102 was quoted for Union Bank bonds (*Niles' Register*, XLVII, 164).

at which these securities should be sold.[40] Up to the end of 1834, only 36 bonds of the 1,500 had been sold. Within a month after the turn of the year, by agreeing not to make any further sales before May 1, 1835, the Barings were able to dispose of 488 bonds at rates that produced the limit of the bank, but only at the sacrifice of a part of their commission.[41] Between May 1 and July 1, 97 bonds were sold at full limits, although separate small sales were required to reach even that modest total. Then, on July 30, the Barings announced the sale of 424 bonds at 100½ "without dividend," again being able to credit the Union Bank at 99 only by accepting ½ per cent less on their commission. Two months later, three years from the time that the contract had been signed, the Barings were having difficulty in disposing of the 455 bonds still in their hands. The rate (101½) quoted in London in November was sufficient, however, to produce both the limits and the commission if buyers appeared.[42]

"Account L" had been closed about six months earlier by recourse to an expedient not mentioned up to this point. As early as the spring of 1833, in order to facilitate disposal of the securities, Baring Brothers and Company had begun the policy of exchanging bonds on "Account L" for other American securities. The first exchange involved the transfer of 348 Louisiana for Pennsylvania, Philadelphia, and Baltimore bonds.[43] In January, 1834, Prime, Ward and King expressed approval of the acquisition of shares of the Bank of the United States and of United States 4½'s in place of the Union Bank bonds.[44] Late in the same

[40] *BPMC*, J. B. Perrault to Baring Bros. & Co., November 29, 1833.

[41] *BPLB*, Baring Bros. & Co. to M. Morgan (president of the Union Bank), January 5, 22, 30, 1835.

[42] *BPOC*, Ward to Baring Bros. & Co., July 27 (and inclosures), September 28, 1835; *BPLB*, Baring Bros. & Co. to M. Morgan, July 30, 1835; *Niles' Register*, XLIX, 301. According to this latter source, "Louisiana Barings" were quoted in London on April 23 at 101½ to 102 and on July 2 at 102½ to 103½ (*ibid.*, XLVIII, 220, 412). In April, of course, the Barings could make no sales in the market and the figure for July substantiates the statement that 97 bonds could be sold at full limits at approximately that date.

[43] *BPOC*, Ward to Baring Bros. & Co., April 21, 1833. No details as to prices were given.

[44] *Ibid.*, Prime, Ward & King to Baring Bros. & Co., January 23, 1834.

autumn the Barings exchanged £20,000 of Louisiana bonds at 102 for 5 per cent bonds of the United States at 92. "Account L" was finally closed in London in January, 1835, by the exchange of $96,000 of Louisiana bonds for $110,000 of New York Life Insurance and Trust Company certificates bearing 4½ per cent interest.[45]

The early fears of the Barings that high prices would not be received and that the disposal of such a large amount of bonds would require at least three years were obviously more than realized. Numerous factors, all of which were carefully observed by Baring Brothers and Company, contributed to that outcome. New issues of bonds, state and municipal and corporate, in Louisiana itself impaired to a degree the confidence in the "Union Bank bonds" on the part of the British investing public. This occurred at a moment when increasing amounts of issues of other states, municipalities, and corporations were appearing in England and were causing a less wholehearted acceptance of American securities. Upon the same market, bonds from the West Indies, Canada, and Europe were also descending. All these circumstances were complicated still further by internal political and economic developments in both England and the United States, not to mention other parts of the world. The nullification episode, tariff reform movements, the great reform bill of 1832 in England, and the fear of war between the United States and France over the payment of the French indemnity might be cited as illustrations of these circumstances. Marketing a loan in the 1830's, as in the 1930's, was no simple operation.

Moreover, the management of such a loan as that of the Union Bank involved some points of friction with the New York colleague and with the Union Bank itself. Prior to January 1, 1833, the New York house had drawn on the Louisiana bonds on "Account S" for more than £212.10 per $1,000. The Barings pointed out that violation of their wishes and the mistake was

[45] *BPLB*, Baring Bros. & Co. to Prime, Ward & King, November 19, 1834, January 22, March 30, April 6, 14, 1835; Baring Bros. & Co. to Ward, November 19, 1834; *BPOC*, Ward to Baring Bros. & Co., February 28, 1835; Prime, Ward & King to Baring Bros. & Co., March 2, 1835.

admitted by Prime, Ward and King, who promised to draw less in future in order to make up the difference.[46] At a later date the New Yorkers refused to cover cash advances of the Barings upon unsold bonds because the money could be used to such advantage in the United States at the time.[47] The Barings acquiesced on that occasion, but after the last of the bonds on "Account L" had been exchanged for certificates of the New York Life Insurance and Trust Company, they refused to close the account until Prime, Ward and King remitted to cover the advances made more than eighteen months earlier. In this case the New York house did as requested.[48] In general, Baring Brothers and Company had been firm but amiable with their colleague.

Relations with the Union Bank, however, were marked by an extraordinarily conciliatory attitude on the part of the London merchant-bankers. When the officers of the bank objected to the demand of Prime, Ward and King and Ward that the whole amount of dividends, even those collected by the directors before dispatch of the bonds to New York, should pass through the counting-house of the Barings, the London partners acquiesced without a murmer. When the directors of the bank insisted that the six months which were to elapse before Baring Brothers and Company must decide upon the method of handling the last 1,500 bonds should be considered as ended on May 1, 1833, in New Orleans rather than in London, the partners accepted the point of view of the bank in lieu of that of their agent.[49]

A third misunderstanding with the Union Bank threatened to reach more serious proportions. It will be remembered that Baring Brothers and Company were obligated under the contract to

[46] *Ibid.*, Ward to Baring Bros. & Co., May 21, 1833; Prime, Ward, King & Co. to Baring Bros. & Co., January 7, May 23, 1833.

[47] *Ibid.*, September 30, November 22, 1833; Ward to Baring Bros. & Co., November 7, 1833.

[48] *Ibid.*, March 13, 1835; *BPLB*, Baring Bros. & Co. to Prime, Ward & King, April 14, 1835.

[49] *BPOC*, Ward to Baring Bros. & Co., January 22, 28 (and inclosure), April 13 (and inclosure), 29 (and inclosure), 1833; Prime, Ward, King & Co. to Baring Bros. & Co., January 23 (and inclosure), 31 (and inclosure), April 9, 15, 23, 30, May 31, June 22, 1833.

advance to the bank $1,000,000 upon the last 1,500 bonds if they were not purchased outright. Sales being slow, the Barings requested in April, 1834, that the amount of the advance should be reduced to $500,000 and that the limits of the bank for sales should be lowered. The Union Bank agreed to remit funds to repay one-half the advance, but would not alter the limits. Then, in September of the same year, the Barings wrote that they would feel at liberty to effect sales at market rates unless the remainder of the advance was covered. The officers of the bank answered that measures would be taken at once to cover the advance of $500,000, and stipulated that the remaining bonds be held subject to their order. They interpreted the letter from London to mean that the Barings desired to cancel all arrangements. A circular was then addressed to several bankers in London for the purpose of ascertaining the terms upon which they would be disposed to accept the agency of the bank.[50] The Barings replied to this action with a very conciliatory letter. They protested that the house had never had any intention of asking the bank to alter its relations with the firm, but that the state of the British money market and of Louisiana credit did not seem to warrant insistence upon limits above the market value of the bonds. As noted, the Barings were able shortly to effect sales, though only at levels involving a sacrifice of a part of their own commission. The president of the Union Bank was satisfied with the sales, but asked for a credit of £200,000 to be covered with remittances if the bonds were not all sold at the end of 1835. The Barings granted the credit but refused to reduce their commission charges upon acceptances as asked by the bank.[51]

Two months before the Barings were forced to make these concessions to the Union Bank they foresaw that the whole operation was going to produce a profit. All the exchange transactions involving the 5,500 purchased bonds had been conducted with

[50] *BPMC*, M. Morgan to Baring Bros. & Co., November 11 (and inclosure), 15 (and inclosure), 1834.

[51] *BPLB*, Baring Bros. & Co. to M. Morgan, January 5, 22, 30, July 30, 1835; *BPOC*, Ward to Baring Bros. & Co., February 20 (and inclosure), March 27 (and inclosure), April 29 (and inclosure), July 27 (and inclosure), 1835.

reasonable success, even though some drafts had been sold below 108 and some interest charges had been incurred. One-half per cent commission to each of the contractors had been received on the sale of the 1,000 bonds on "Account S" and better than an average of 1½ per cent on the 1,500 marketed for the Union Bank. It is not surprising, therefore, that the Barings wrote to Ward on November 22, 1834, "The account L tho a long winded one will leave a handsome result. . . . ."[52] Unfortunately, accounts were not included in the papers examined and accurate estimates of profits therefore could not be made.

Even the measures discussed above, however, did not exhaust the avenues of gain, immediate or potential, upon the operation. Interest had been received upon the purchased bonds until the final sale. The Barings could look forward to commissions upon payment of interest and principal to the bondholders. And the purchase of the bonds had brought to Baring Brothers and Company the foreign exchange business of the Union Bank. On the same day that the contract was signed, Ward agreed with the attorneys of the bank that the institution should have an open credit of £40,000 with the Barings. It was stipulated that the account must be active and that it must be covered once every three months. Commissions and interest rates were to be the same as those enjoyed by the Bank of the United States.[53] That the Union Bank kept the account active is indicated by the desire of the president to add to the open credit another for £200,000 secured by unsold bonds, as noted previously.

In spite of the successful outcome, the experience with the Union Bank loan induced the Barings to alter their policy regarding the marketing of American bonds. The transaction "has however shewn us," they wrote to Ward in November, 1834, "that as long as prices of American securities are too high for speculation, the amount is too large for one Loan and that parties interested with us must another time stand [on] their own re-

[52] *BPLB*, Baring Bros. & Co. to Ward, November 22, 1834.

[53] *BPOC*, Ward to Baring Bros. & Co., August 15 (and inclosures), 1832, April 29 (and inclosures), 1835.

sources instead of leaning on ours."[54] Prior to 1842 there is no indication of a deviation from this decision. On the contrary, there is evidence in abundance that the house engaged only to take small issues or small parts of large issues in conjunction with collaborating houses in the United States and England.

All in all, the entire transaction serves as an excellent illustration of the technique of a representative merchant-banker in the 1830's. Although the loan contributed to a change in policy, its history shows recourse to every possible expedient for making a profit. The Barings took advantage of the necessity of transferring funds to the United States to aid in producing a gain, though the average premium on sterling was not as high as was anticipated. Because exchange on London was sold at a premium, however, the house could offer the bonds at a rate lower than that paid for them. Advance sales to private individuals and bond brokers were utilized. A public subscription for future purchase was held. Bonds were sold in large quantities, from twenty to one thousand at a time, rather than in small lots. When sales for cash could not be made, the contractors resorted to exchange of Louisiana for other American securities. Firmness, liberally tempered with conciliation, characterized all relations of the contractors in this typical "joint account" operation. Finally, an outcome much desired by all businessmen, the transaction was used as a means for bringing more business to the London firm.

[54] *BPLB*, Baring Bros. & Co. to Ward, November 22, 1834.

THE INCIDENCE OF A GENERAL OUTPUT OR A GENERAL SALES TAX

HARRY GUNNISON BROWN
University of Missouri

IT IS generally recognized by students of taxation that a tax on the output of a particular commodity raises the price of such a commodity by decreasing its supply. But what if there is a tax on the production of all commodities and services—an equal proportionate tax on all lines of production? Will such a tax raise prices? Clearly it cannot make any particular kind of commodity, such as cigarettes, relatively scarce by driving producers of it into other lines, for other lines of production are then equally taxed, and there is no advantage in leaving one taxed line for another line which is taxed to the same extent. Where, then, does the burden of the tax rest?

A good many persons too readily conclude that such a general tax must raise all prices. But there are important considerations which such persons overlook. Such a general tax cannot reduce the output of goods unless workers are willing to remain idle—for there is no untaxed line to go into—or unless owners of capital or land are willing to let their capital or land lie idle and to receive no income at all from it. Surely, most men would, in time, accept wages very considerably lower rather than be chronically idle, and most owners of capital would rather have very greatly reduced returns on their capital rather than let their capital depreciate unused and get no returns at all. Similarly, landowners—other than vacant-land speculators (and we need hardly conclude that a general output tax, apart from any incident reduction in land-value taxes, would increase the number of these)—would presumably rather receive lower rent than no rent.[1] We cannot expect, therefore, that a general tax on output would cause permanent cessation of production or that it would, as a long-run phenomenon, bring any appreciable decrease. Why suppose, then, that it could, in the long run, make prices higher?

[1] Of course vacant-land speculators, like other human beings, commonly prefer something to nothing. The circumstances which nevertheless make them hold their land unused, for a time receiving no rent, are set forth, at least partially, in my book on *The Economic Basis of Tax Reform* (Columbia, Mo.: Lucas Bros., 1932), pp. 268–74.

An increase in the volume of circulating medium, whether it be through the issue of additional money or an expansion of bank credit, tends definitely toward a higher range of prices. But there is certainly no obvious connection between a general tax on the output of goods and an increase of the volume of circulating medium. There is, therefore, no basis in monetary theory for supposing that a general tax on all goods will make average prices permanently higher. To raise the general level of prices there must be either a decrease of supply of goods in general or an increase of demand (as through an increased volume of money). If a tax on the output of all goods neither decreases supply nor increases demand, on what basis is it to be argued that such a tax will raise prices?

If a tax on all goods does not raise prices, it must lower the money incomes of (the number of dollars received by) workers, capitalists, and landowners. We shall begin with the workers. Here, let us say, is a coal-mine worker who is able to add to the output of a given mine one ton of coal a day. The coal is worth, at the mine mouth, $2.00 a ton. At a wage of $2.00 a day, this worker is barely worth hiring. Now, suppose there is an output tax of 10 per cent. When the coal is produced and sold, 20 cents must be paid as a tax to the government. That leaves only $1.80. The coal-mine worker whose labor adds this ton to the total output is no longer worth a maximum of $2.00 to the employing company but only a maximum of $1.80. For, if the company can sell this coal for no more than $2.00 and must pay 20 cents of this to the government, the ton of coal is worth, to the company, not over $1.80, and it cannot afford to hire the mine worker at any greater wage than $1.80. So far as the community is concerned, the worker's marginal productivity is $2.00. But, since the government takes 10 per cent of this, his marginal productivity is, to the employing company, only $1.80. If he wants to work, he cannot expect greater wages than his work is worth to the employing company. Nor, as we have seen, can the price of coal be permanently raised, for a similar tax is applied in every other industry and there is consequently no escape from the tax by changing to some other line. Thus, such a tax on the output of all commodities and services necessarily reduces wages.

Let us follow out one more illustration. A farm worker adds to the output of wheat 400 bushels a year. This is a "marginal" addition, what the worker can do on no-rent land or as the "final" worker hired on a piece of high-grade land (intensive margin). At a price of $1.00

per bushel, this comes to $400. But if government, by an output tax, takes $40 of the price, the farm worker cannot possibly be worth, to an employer (or to himself, if he is self-employed), $400, but only $360. If the 10 per cent tax is levied at each stage of production and there are several stages (e.g., wheat, flour, bread, retail distribution), we must, to avoid having duplication of taxation, levy the tax at each stage only on the addition of value made to the product at that stage. Or the tax might be levied at the very last stage (retail sales), in which case it will be reflected back through the various stages to the recipients of the various kinds of income, as will be shown, with due qualification, in succeeding paragraphs.

Such a tax on all output will reduce the income of the capitalist and of the landowner in the same proportion that it reduces the income of the worker,[2] but not in any greater proportion. And since wages are a much larger part of the total product of industry than is either interest on capital or rent of land, a general output tax takes more from the wages of labor than it takes from interest or rent.

Let us now see just how a general output tax reduces the return received by owners of capital. Suppose that a farmer believes that an investment of $1,000 in fertilizing or otherwise improving his farm will add to the output which his labor can bring, every year, by some sixty bushels or $60 (in excess of an allowance for depreciation). He could then afford to pay not over $60 annual interest, or 6 per cent, for a $1,000 loan. But if a general output tax takes $6.00 of the $60, the improvement adds only $54 to that value of the output which the farmer will have after paying the tax, and he would be losing money to pay more than 5.4 per cent interest. Were the lender himself to invest his savings in producton under his own direction, the tax would take an equal per cent of the output; hence, he might as well lend to someone else for a lower rate than before. And necessarily, under these conditions, the demand for loans will decline until lenders are receiving 10 per cent lower interest than previously, just as wage-earners must receive 10 per cent lower wages than before. (The part of the output required to offset capital depreciation is, of course, "imputable" to the labor and other factors used in constructing the capital, and the proportionate tax on that part of the output is shifted back upon these factors.)

It is the same in regard to the rent of land. Suppose, for example, that a coal-mine operator could afford to pay $10,000 a year, as royalty,

[2] See my book, *The Economic Basis of Tax Reform* (Columbia, Mo.: Lucas Bros., 1932), pp. 128–29.

for permission to exploit a given coal mine, the coal being worth $2.00 a ton. Is it not obvious that, if the coal output is taxed 10 per cent, so that the operator receives, in effect, only $1.80 per ton, he cannot afford to pay as high a royalty? And is it not also clear that, since no other would-be operator can afford to pay as high a royalty as before, the possible competition of operators will be reduced and royalties must fall?

Or let us suppose the case of a farmer who has too little land to employ his labor most effectively. By hiring a neighboring piece of land he can, we may suppose, add fifty bushels a year to his output of wheat, without working any harder or longer than before. Obviously, he could afford to pay not over fifty bushels a year as rent for the use of this extra piece of land, or, with wheat at $1.00 a bushel, not over $50. But if an output tax takes $5.00 of the $50, he cannot afford to pay over $45. Clearly, the net rent received by the landowner must be reduced.

If, then, there is a general tax on output, the money incomes received by laborers, capitalists, and landowners must all be reduced. Since, of the prices paid for goods, a part (in our illustration 10 per cent) is taken by government, only the remainder can go as wages, interest, and rent for the factors of production. The incidence of a general output tax is, then, in practical effect, the same as if it raised all prices (as most of the public seems to suppose it does) without either decreasing or increasing money incomes. For in either case there is a subtraction, proportioned to the tax, from the real incomes of wage receivers, interest receivers, and recipients of land rent. Whether commodity prices remain the same and money incomes fall or commodity prices rise and money incomes remain unchanged, the distribution of the tax burden would appear to be identical.

A general tax on output will easily commend itself to those persons who believe that taxes should rest on everybody in about equal proportion to their respective incomes or spendings, however small these may be, and *with no distinction as to sources* of income or as to kinds of property owned.[3]

The general output tax with which a majority of us are now most familiar is the general retail sales tax. In the American states where this tax has been adopted, it does not really apply to all retail transac-

[3] The reasons why I cannot subscribe to any such belief but consider it essential to distinguish between sources of income and, therefore, between kinds of property, I have set forth at length in *The Economic Basis of Tax Reform* (Columbia, Mo.: Lucas Bros., 1932).

tions. There are various exceptions to its generality, depending on the jurisdiction, e.g., newspapers, haircuts, laundry and cleaning service, shelter, foods. But in many of the states, retail food sales are taxed the same as any other sales. In so far as the retail sales tax, as above indicated, is not all-inclusive, but bears on some lines of production and exempts others, it tends to make some prices higher than others. But since this tax, in several of the states, is so nearly a general tax, we shall, for purposes of the present analysis, assume it to apply in all lines equally.

Nevertheless, no purely retail sales tax which is not at the same time ubiquitous can apply to the entire output of goods even in a single county or state (or country), if those who live within the given territory are engaged in trade with outsiders. And, therefore, a retail sales tax, levied on all retail sales in a given state but not levied ubiquitously, will raise retail prices in that state.

Let us consider, for example, the 3 per cent general retail sales tax in Michigan, assuming, for the present, no sales taxes in surrounding states. This means that goods on which a 3 per cent retail sales tax will be levied, if they are sold to Michigan consumers, can escape the tax if they are exported to other states. If the tax applied equally on exported goods, then the factors of production, labor, capital, and land, would have to accept lower money incomes. The money returns for wages, interest, and rent would be appreciably reduced. But since exported goods escape the tax, this result does not follow. Producers of goods face no tax—even on retailers whose demand for their goods might thus be reduced—if they ship their goods outside of the state. And they will obviously accept no lower net prices from dealers inside the state than from dealers outside. Retailers in Michigan must pay approximately as high prices for Michigan produced goods which have a ready out-of-state market as if there were no Michigan retail sales tax. And since the returns to labor, capital, and land used in retailing can hardly be kept at a permanently lower level in relation to returns in wholesaling, manufacturing, etc., than before, the prices paid for goods by Michigan consumers must presumably rise.

But can we have, in Michigan, wages, interest, and rent as high as before, producers' prices as high as before, wholesale prices as high as before, retail prices actually higher than before, and a sales tax going to the state government, while the volume of circulating medium in Michigan has not increased? The answer is that the volume of circulating medium in Michigan, under the assumed conditions, will increase. For, since the tax applies on sales in Michigan and not on

sales made out of state, and since, at the start, the money incomes of residents of Michigan are not greater than before, they simply cannot buy as many goods as before if retail prices are higher. Yet retail prices must be higher unless producers sell goods to Michigan retailers for less than before, since otherwise the retailers' incomes would be relatively too low. (If this is not at once obvious in the case of a 3 per cent sales tax, it certainly would be so if the tax were, say, 10 or 15 per cent.) And producers surely will not absorb the entire tax, or even any appreciable part of the tax, so long as they can avoid the tax by selling goods outside of the state. Looking at the matter, then, from any reasonable point of view, we must conclude that out-of-state sales will be relatively favored until the resulting increase of circulating medium within the state makes possible wages, interest, rents, producers' and manufacturers' prices, and wholesale prices approximately as high, in relation to the corresponding incomes and prices in surrounding states, as before, and retail prices higher by the amount of the tax. It is to be noted, of course, that the inflow of circulating medium from other states into Michigan will lower, but only to the slightest extent—since we are assuming these other states to be without general sales taxes and since only a little money would flow into Michigan from any one of them—the general price level in these states.

" So far as concerns a general retail sales tax levied by a single state or by a very few states, our conclusion is that such a tax would raise retail prices in such a state or states by approximately the amount of the tax. The view of the man in the street that such a tax raises the prices of goods in general is, to this extent, confirmed.

There is another important qualification which ought to be noted here. Even if a retail sales tax is levied ubiquitously and at the same rate, there would still be some rise of retail prices. In the absence of friction (of which account is taken at a later point in this discussion), there would be an immediate adjustment of relative prices but no change in the general price level. Since the tax is levied at the point of retail sales, a wedge is driven, so to speak, between retail and wholesale prices. Wholesale prices, producers' prices, wages, interest, and rent—all these are slightly lowered. Retail prices are raised and exceed wholesale prices more than before by the amount of the tax. The decrease in the money incomes of workers, capitalists, and landowners, as individuals, is balanced by the new tax receipts of the government. Individually, the people have less money to spend. Collectively—through the sales-tax receipts, to be spent by the government—they

have more to spend. The average of manufacturers' and other producers' prices, wholesale prices, and retail prices remains unchanged, but manufacturers' and other producers' and wholesale prices are lower while retail prices are higher.

If the tax were levied at some earlier stage in production, instead of on retail sales, then we could speak of the "wedge" as being driven between prices at this earlier stage, the prices preceding this stage being lowered and those succeeding it being raised. But the average of all commodity prices would still not be affected.[4]

If a tax were levied at each stage of production, but only at a proportionate rate on the value added at that stage, then no commodity prices, whether producers' prices, wholesale dealers' prices, or retail prices, would be changed at all; but all money incomes received by individuals—wages, interest, and rent—would be lowered; and the money income received by the government for collective spending would be raised by an equivalent amount.[5] (This is on the assumption that this tax is not a substitute for other previously levied taxes but is

[4] If the tax is thus levied at an earlier stage, i.e., the "wedge" driven at an earlier stage, fewer prices are, of course, reduced by the tax and more prices are raised by it. Therefore, if the average commodity price level is to be the same, those relatively few prices which are reduced must be reduced to a greater degree, and the larger number which are raised must be only slightly raised. Perhaps one way of putting the matter—though I suspect it is a way that to most persons will be more confusing than illuminating—is to say that when the "wedge" is driven at an earlier stage, the "tax addition" (if we may so speak) to the price which the buyer at retail pays must also be paid by the retailer to the wholesaler, and so on, to the point of government collection. In a sense we may then say that the tax money paid by purchasers at retail goes through several hands on its way to government and that, therefore, this tax money is, during the period of such passing, prevented from acting on "net" prices (in the sense of prices minus tax) as quickly as if it did not pass through so many stages. Thus, "net" commodity prices (in this special sense of prices minus tax) will average lower than if the tax were collected at the point of retail sale. This was probably (or so I hope!) one of the ideas I had vaguely in mind in writing "Some Frequently Neglected Factors in the Incidence of Taxation" (*Journal of Political Economy*, Vol. XXVIII, No. 6 [June, 1920]), although enough in that article is definitely fallacious so that I am sure I could not then have really thought the problem through or fully understood it. But the essential point I am trying to stress now is that average prices (counting producers', wholesale, and retail prices) actually charged in the markets are not made either higher or lower by output or sales taxes, and that the average is, therefore, the same regardless of where the "wedge" is driven. And I want to take this opportunity to disavow anything in the earlier article here referred to which is inconsistent with the present treatment.

[5] Of course, less individual spending and more collective spending might change the relative demands for and marginal cost of various kinds of goods and so have some effect on their relative prices.

to provide new revenue.) Such a tax really would be a "proportional" income tax "collected at source" and having "no exemptions."

Returning, now, to the general fact that retail sales taxes levied in one state, or only a few states, make retail prices higher by the amount of the tax than in areas where such a tax is not levied, we may take note of a qualification hitherto not commented on. Persons living in a state where a retail sales tax is levied, but near the borders of a state or states where there is no such tax, may do a considerable amount of shopping in such a near-by state or states. Conceivably, some retail establishments in towns near the borders of a state levying no sales tax could keep down their prices a bit, to avoid losing trade, perhaps paying less to some employees who would nevertheless continue to clerk for them because of immobility and lack of acceptable alternatives, and less as rentals for stores and sites having no equally good alternative use. But it is doubtful if this would occur to any noticeable extent, and the probability is that only those consumers would avoid the tax in any appreciable degree who really did shop beyond the state borders. Some would avoid the tax, too, who purchased of mail-order houses outside the state, since such purchases would be interstate and, as such, by the federal Constitution, not subject to the tax. State retail taxes of, say, 10 or 15 per cent would probably result, therefore, in a great loss of business to local retail firms and a tremendous increase in the sales of mail-order houses, and would presumably be, just for that reason, politically impossible. (If nevertheless levied, the increase of retail purchases outside the state would, of course, increase the volume of exports, from the state, of goods produced within its borders.)

In most of the previous discussion we have been assuming absence of friction and, therefore, immediate adjustment of relative prices (including incomes) to the tax levy. Especially has no attention been paid to the theory of "sticky" prices, e.g., "sticky" wages and rentals. But when attention is paid to this theory, it is seen that the rapid and general introduction of sales taxes, though perhaps brought about, in part, by certain consequences and ideologies resulting from depression, itself tends to produce depression.

We have seen that a general and ubiquitous sales tax cannot, as a normal, long-run proposition, increase the general level of commodity prices. But now we may note that any general attempt to increase commodity prices when there is no increase in purchasing power must tend to a decrease of sales and to dull business.

But if commodity prices are not increased, then, as we have seen, money wages, interest, and rent must fall. And if these (wages, interest, and rent) are "sticky" and so cannot be quickly adjusted, then there must obviously ensue a period of unemployment and generally dull business. The rapid introduction of sales taxes certainly tends to bring business depression and, if depression already exists, the introduction of such taxes must, it would seem, tend to retard recovery and to make the depression worse. (In a similar way, if wages are "sticky," the rapid introduction and increase of pay-roll taxes to provide for unemployment insurance and old age benefits must operate in the direction of unemployment.[6])

So here we are apparently treated to another of the various contradictions of this remarkable New Deal era. Depression has made more vocal and persistent the demands of real estate owners for "tax relief for real estate." Depression has increased the need for funds to care for the jobless. Depression has, therefore, promoted the spread of sales taxes. Yet, if the analysis presented above is, in any essential degree, correct, the spread of such taxes has also fostered depression, has put more workers out of jobs and caused increasing pressure for more sales taxes to care for these increasing unemployed, and has, by virtue of the consequent heavier taxes on the poor, brought nearer to the level of "reliefers"—perhaps not infrequently below the level—not a few of those who have continued to have comparatively steady employment. As the government, under the N.R.A., to a considerable extent offset its borrowing and spending recovery program directed to the increase of purchasing power by encouraging monopolistic price rises, and as it adopted a farm-aid program which put many tenants (especially in the South) out of employment, so it has followed a tax policy for the relief (partly) of those injured by the depression, which, itself, must have tended to cause and accentuate depression.

[6] While taxes on output result in reduced wages and interest and rent, the incidence of pay-roll taxes, like the incidence of compulsory insurance of workers against accident, is on wages. The subject of accident insurance I discussed in this connection in an article in the *Journal of Political Economy*, Vol. XXX, No. 1 (February, 1922), entitled "The Incidence of Compulsory Insurance of Workmen"; and this discussion was later republished as chap. vi of *The Economics of Taxation*. For a clear presentation of the theory of incidence as it relates to the new program of social security, with some reference to minor qualifying influences, see Russell S. Bauder, "Probable Incidence of Social Security Taxes," *American Economic Review*, Vol. XXVI, No. 3 (September, 1936).

NOTE ON THE PROBLEM OF BILATERAL MONOPOLY

GERHARD TINTNER
Iowa State College

THE problem of bilateral monopoly consists of the case where the monopolist of a finished commodity, e.g., steel, is a monopsonist of one factor of production, e.g., iron ore which he buys from another monopolist. A similar problem was first discussed by Cournot.[1] Later, another solution, now more or less generally accepted was offered by Edgeworth.[2] (The difference really results from different assumptions, since one monopolist uses his monopoly power only as a seller and not as a buyer, according to Cournot and his followers.) The definitive statement of this position was made by Bowley.[3] Hicks[4] added some refinements. Further important participants in the discussion include Pareto,[5] Marshall,[6] Pigou,[7] Wicksell,[8] Schumpeter,[9] Zeuthen,[10] Schneider,[11] von Stackelberg,[12] and Leduc.[13] We shall here follow closely Bowley's and Hicks's presentation.

[1] A. Cournot, *Researches into the Mathematical Principles of the Theory of Wealth* (New York, 1929), pp. 99 ff.

[2] F. Y. Edgeworth, *Mathematical Psychics* (London, 1932), pp. 21 ff.

[3] A. L. Bowley, *The Mathematical Groundwork of Economics* (Oxford, 1924), p. 62; "Bilateral Monopoly," *Economic Journal*, XXXVIII (1928), 651 ff.

[4] J. R. Hicks, "Annual Survey of Economic Theory: The Theory of Monopoly," *Econometrica*, III (1935), 16 ff.

[5] V. Pareto, *Cours d'économie politique* (Lausanne, 1896), pp. 63 ff.; *Manuel d'économie politique* (Paris, 1909), pp. 594 ff.

[6] A. Marshall, *Principles of Economics* (8th ed.; London, 1936), pp. 493 ff.

[7] A. Pigou, *The Economics of Welfare* (2d ed.; London, 1924), p. 177; "Equilibrium under Bilateral Monopoly," *Economic Journal*, XVIII (1908), 205 ff.

[8] K. Wicksell, "Mathematische Nationaloekonomie," *Archiv für Sozialwissenschaften und Sozialpolitik*, LVIII (1927), 275 ff.

[9] J. Schumpeter, "Zur Einführung der folgenden Arbeit Knut Wicksells," *Archiv für Sozialwissenschaften und Sozialpolitik*, LVIII (1927), 250 ff.

[10] F. Zeuthen, *Problems of Monopoly and Economic Warfare* (London, 1930), chap. iv; "Du monopole bilateral," *Revue d'économie politique*, XLVII (1933), 1951 ff.

[11] E. Schneider, *Reine Theorie monopolistischer Wirtschaftsformen* (Tübingen, 1932), pp. 59 ff.

[12] H. von Stackelberg, *Marktform und Gleichgewicht* (Vienna, 1934).

[13] G. Leduc, *La Théorie des prix de monopole* (Paris, 1927).

We consider our problem under static conditions. That is to say, we assume that no change in the taste of the consumers takes place, so that the demand function of steel, f, is fixed, and that no changes in technology occur, so that the cost function of iron ore, g, is fixed. We further assume that both monopolists are motivated solely by purely economic considerations and that everyone tries to make his profit, measured in money, a maximum. Mathematically, our problem appears then very simple as a problem of the necessary and sufficient conditions of the maximum of a function of one variable.

All our magnitudes are to be understood as "per unit of time"; for instance, demand of steel per year. Time does not enter explicitly as a variable into static considerations; neither do expectations and anticipations, which are essentially problems of dynamic economics.

Let $p = f(x)$ be the consumers' demand curve for the finished commodity, steel. Let us assume, in order to simplify the case, that one unit of steel is made of exactly one unit of iron ore. This can be done by choosing convenient units. In other words, we assume constant coefficients of production. The theory can, however, easily be generalized to the case of variable coefficients of production. Here, then, x measures at once the quantity of steel and of iron ore. Let $P = g(x)$ be the cost function of iron ore, i.e., the cost of one unit of ore if x units are produced. (P also denotes the price.) In order to satisfy second-order conditions of maxima of profits, we have to assume the existence and continuity of the functions $f(x)$ and $g(x)$ and their derivatives up to the third order. There is a monopoly in the steel as well as in the iron-ore industry.

Given the price of iron ore, P, what is the demand function for iron ore from the steel producer? Let us call $x \cdot f(x)$ his total revenue (price of steel, $f(x)$, times quantity sold, x), and denote it by $R(x)$. Then, the steel producers' profit π is $R(x) - P \cdot x$, where P is the given price of iron ore, a constant, and x the quantity of iron ore used in producing x units of steel. If $R'(x)$ denotes the derivative of the total revenue with respect to the quantity x (or marginal revenue), we see that the condition of maximum is that $P = R'(x) = D(x)$, where D denotes the demand function for iron ore. Under our assumptions the marginal revenue from the sale of steel determines the demand price for iron ore. If the coefficients of production are not constant, we get the marginal value product (marginal physical product times marginal revenue) instead of the marginal revenue.

Again, given the price of iron ore P, what is the supply function for

iron ore by the producer of the iron ore? His profit Π is $Px - C(x)$; where $C(x) = x \cdot g(x)$ denotes the total cost of producing x units of iron ore (the quantity of iron ore, x, times the cost per unit, g). Denoting the derivative of $C(x)$ with respect to x as $C'(x)$, or marginal cost, we see at once that the conditions of a maximum are $P = C'(x) = S(x)$, where S denotes the supply function of iron ore. Hence, the supply of iron ore is determined by its marginal cost. Both curves D and S can be very easily combined into one graph, which facilitates the geometrical exposition of the theory.

The profit of the producer of steel is, as mentioned above, $\pi = R - P \cdot x = \int D\,dx - x \cdot P$. The profit of the producer of iron ore is: $\Pi = P \cdot x - C = P \cdot x - \int S \cdot dx$. Their combined profit is $\rho = \int D \cdot dx - \int S \cdot dx = \pi + \Pi$.

We distinguish three cases: (A) the producer of steel dictates the price of iron ore; (B) the producer of iron ore dictates the price of iron ore; (C) both combine and maximize their joint profit.

Case A.—The producer of steel dictates the price of iron ore; he is limited, however, by the supply function of the producer of iron ore. His profit is again $\pi = R(x) - P \cdot x$, where $P = S(x)$. His profit then becomes $\pi = R(x) - S(x) \cdot x$ and the maximum is reached if $R'(x) = D(x) = S(x) + x \cdot S'(x)$. If this last expression be denoted by $\overline{S}(x)$, the equilibrium amount and price of iron ore are determined by $D(x) = \overline{S}(x)$; $P = S(x)$ (Fig. 1). It is also easy to derive the sufficient conditions for a true maximum. They are $D' < 2S' + x \cdot S''$.

Case B.—The producer of iron ore dictates the price of iron ore. He is limited by the demand function of the producer of steel for iron ore. The iron-ore producer's profit is again $\Pi = P \cdot x - C(x)$, where now by the limiting assumption $P = D(x)$. Hence the profit Π becomes $x \cdot D(x) - C(x)$ and the maximum conditions are $D(x) + x \cdot D'(x) = C'(x)$ or $S(x) = \overline{D}(x)$; $P = D(x)$; if we denote by $\overline{D}$ the two first terms $D + x \cdot D'$ (Fig. 2). Here again the sufficient conditions can be derived easily. They are $2D' + xD'' < S'$. This is the case which was originally treated by Cournot.

Case C.—Here the two producers combine and divide the profit. The combined profit, which is to be maximized, is equal to $\rho = R(x) - C(x)$, or total revenue from the sale of steel minus total cost of producing ore (disregarding other factors), and the maximum condition is evidently $R'(x) = C'(x)$ or $D(x) = S(x)$; $P = S(x) =$

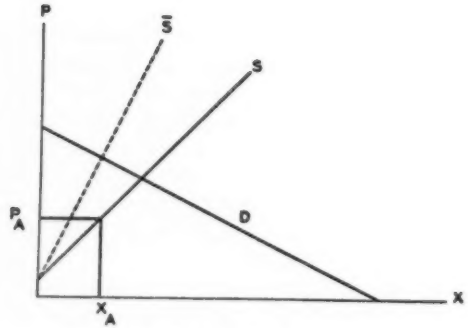

FIG. 1.—Case A

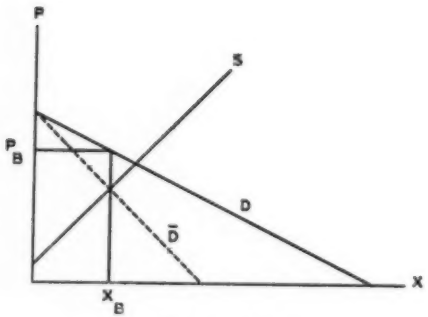

FIG. 2.—Case B

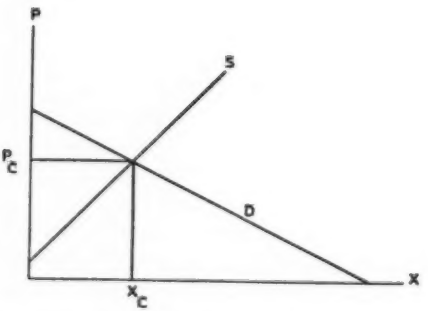

FIG. 3.—Case C

$D(x)$ (Fig. 3). Here again sufficient conditions can easily be established. They are $D' < S'$.

It appears from the graphs that in Case A the quantity of iron ore sold will be determined by the intersection of the curves D and $\overline{S}$. In Case B by the intersection of $\overline{D}$ and S. In Case C by the intersection of the curves S and D. It is clear that Cases A and B will, in general, yield different and incompatible results. P_A will of course be less than P_B. They will determine "the range" within which the price of iron ore will fall, and within this range it will be determined by the bargaining power of the two monopolists. This introduces an essential indeterminancy into the situation of bilateral monopoly under static conditions. The seriousness of the case will be understood if we take into account the fact that it is equally true of any other factor of production of steel, especially of labor. In this case the producer of iron ore is replaced by a trade-union which faces the employer of a monopolized industry. The curve S then denotes the supply curve of labor. D denotes, as before, the demand curve. Here the price of labor, or the wage, will be indeterminate within the range indicated. This case has especially been treated by Bowley.

We want now to consider in somewhat more detail the necessary and sufficient conditions for the coexistence of the cases A, B, C. This, I believe, has not been done before.

Case AC.—What are the conditions under which Cases A and C yield the same result, i.e., the same price and quantity of iron ore? The maximum of the steel monopolist's profit, π, ought to lead to the same result as the maximum of the combined profit of the two monopolists, ρ. From Cases A and C we get the two necessary conditions $D = S + xS'$ and $D = S$. Those can be replaced by the simpler two conditions: $S' = 0$ and $D = S$, since x, the quantity of iron ore, is essentially positive. Hence, the condition necessary for the coexistence of solution A and C is that S, the supply curve, has a horizontal tangent in the maximum point and that supply and demand curve meet there. At this point the curves S and $\overline{S}$ have the same value (Fig. 4).

The sufficient conditions yield $D' < x \cdot S''$ and $D' < 0$.

Case BC.—The maximum of the profit of the iron ore-producer, Π, and of the combined profits of the two monopolists, ρ, give the same output and price of iron ore. The necessary conditions are from Cases B and C: $S = D + xD'$ and $D = S$. They give the two somewhat simpler conditions: $D' = 0$ and $D = S$, since again x is positive. Hence the conditions for the coexistence of Cases B and C are that D,

the demand curve for iron ore, has a horizontal tangent at the maximum point and that supply and demand of iron ore are equal. The

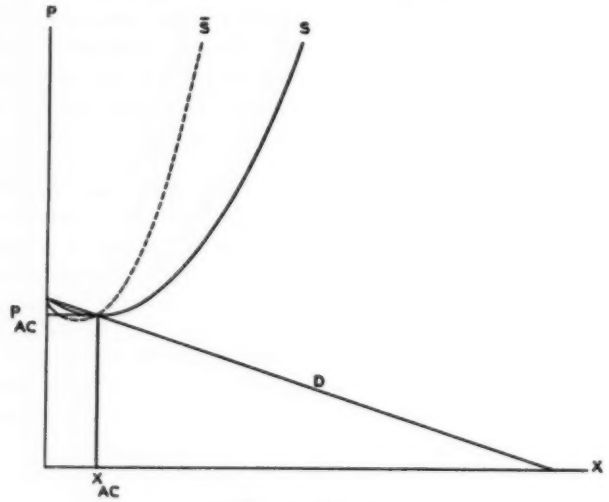

FIG. 4.—Case AC

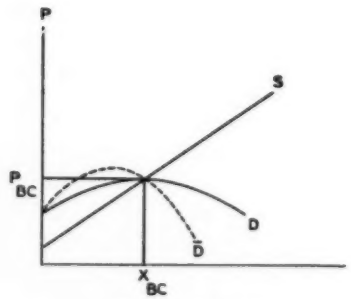

FIG. 5.—Case BC

curves D and $\bar{D}$ coincide at the point of equilibrium (Fig. 5). Sufficient conditions are $xD'' < S'$ and $S' > 0$.

Case ABC.—If Cases A and B yield the same result, then this implies necessarily the same for Case C. The conditions are the simul-

taneous fulfilment of the three equations: $D = S + xS'$; $S = D + xD'$; $S = D$. They can be replaced for the same reasons as before by the three somewhat simpler equations: $D' = 0$; $S' = 0$; $D = S$. Or, in order that all three cases should yield the same result: the tangents of the demand function, D, and of the supply function, S, must be horizontal at the point of equilibrium and demand and supply of iron ore must be the same. All four curves, D, $\overline{D}$, S, $\overline{S}$, coincide in the point of equilibrium (Fig. 6).

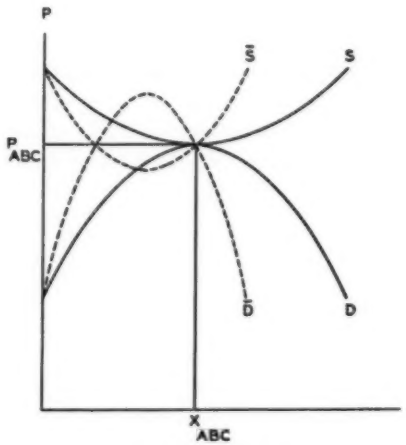

FIG. 6.—Case ABC

From the combination of the sufficient conditions of the three cases it follows that the three conditions must hold true for the Case ABC: $S'' > 0$; $D'' < 0$; $D'' < S''$. (The last is, of course, implied by the first and second.) The "demand curve" D is really a marginal revenue curve and hence the demand curve for the finished product may still slope down. The supply curve shows the usual features of marginal cost curves.

It appears from this analysis that it is very unlikely that Case ABC will be realized under the static conditions which we have discussed. We have to take into account the fact that demand for steel and cost of iron ore are essentially two different determining conditions of our problem and that there is no a priori reason why they should behave in the peculiar way which is necessary for the peaceful solution of the

problem of bilateral monopoly. On the contrary, in general there will be opposition of interest and the price of iron ore will be indeterminate within a certain range which may be very wide.

Other noneconomic, especially political, forces will create the bargaining power of the two monopolists, which in turn determines the price within the range indicated. It is very easy to see that the introduction of dynamic conditions could in most cases yield a stable result. This point has been investigated, especially by Hicks[14] and Zeuthen.[15] But a consideration of dynamic problems which involve time is outside the scope of the present paper.

[14] Hicks, *loc. cit.;* see also *Theory of Wages* (London, 1935), pp. 136 ff.

[15] Zeuthen, *loc. cit.*

BOOK REVIEWS

Mathematical Analysis for Economists. By R. G. D. ALLEN. London: Macmillan & Co., Ltd., 1938. Pp. xv+548. $9.00.

Mr. Allen's book fills a most important gap in our literature on mathematical economics. This subject has finally, after an uphill struggle of the great pioneers, established itself firmly and has become recognized even in academic circles in this country, mainly thanks to the efforts of the Econometric Society. The time has evidently come to give a broad survey of the field, and this once revolutionary subject is entering the stage in which textbooks are being written about it. Mr. Allen has fulfilled this task most admirably, and he has given us a textbook which stands up very well with the best we have in other fields.

Mathematical Analysis for Economists serves a double purpose. It presents very clearly and in a thoroughly adequate manner all, or at least most, of the mathematics which the economists need for their own purposes. It is, from the point of view of the economist, superior to ordinary books on calculus or advanced calculus, since it does not contain applications to physics and the natural sciences, but to economics instead. Mr. Allen is by training a mathematician, and he has certainly done an extremely good job about this part of his task. The first chapter deals with numbers and variables; the second presents functions and graphs; the third, analytical geometry; the fourth, limits and continuity of functions. Further chapters deal with the following subjects: functions of one variable, derivatives, functions of two or more variables, partial derivatives, differentials, maxima and minima, integrals, differential equations, Taylor series, determinants, quadratic forms, and even calculus of variations. No ordinary textbook in advanced calculus presents, for instance, such a thorough treatment of the problem of constrained maxima and minima in several variables, which is so important for economic applications. As a mathematics text it can be recommended for self-study and as a handbook to any economist who has had some college mathematics. Even if he has forgotten most of this, it will probably revive his memory very quickly and give him all the analytical apparatus which he will need in order to understand and follow modern developments in mathematical economics. No-

body who has thoroughly studied and understood Mr. Allen's book should have much trouble in reading, for instance, most articles appearing in *Econometrica*.

Mr. Allen wanted to give the economists the mathematical equipment which is nowadays indispensable for keeping up with the expanding field of mathematical economics. In his many applications and examples he really gives us also the best textbook on mathematical economics which we have at present. Mr. Allen is one of the most prominent young English economists and statisticians, and he has himself made very important contributions to economic theory which he has partly incorporated in his treatise. It is, of course, not a systematic and continuous development of economic theory. The economic problems are only introduced as applications and examples in connection with certain mathematical theorems. Nevertheless, the treatment—especially of the theory of consumer's choice, monopoly, and production—is excellent and among the best we have on these subjects. Everybody who will work through the economic applications and examples will get a better knowledge of contemporary mathematical economics than he could get in any other way.

This book would also make a very good text for graduate work in mathematical economics. The only point in which some criticism may be made is that the chapter on the calculus of variations is somewhat short and that the problems of dynamic economics, which in our time have come more and more into the foreground, are not as frequent in Mr. Allen's book as they deserve. But in this respect G. C. Evans, *Mathematical Introduction to Economics* (New York, 1930), would supplement Mr. Allen's book very well. The student could probably get an adequate mathematical introduction to problems of functionals and the calculus of variations in Allen's *Mathematical Analysis for Economists* in order to be able to follow Professor Evans' exposition. Mr. Allen's book deals mainly with the static problems of economics. Once more, the author should be congratulated upon his achievement. He has produced an extremely well written and useful book.

GERHARD TINTNER

Iowa State College

Full Recovery or Stagnation? By ALVIN HARVEY HANSEN. New York: W. W. Norton & Co., 1938. Pp. 350. $3.50.

This book is an admirable achievement in literary thrift. In it Professor Hansen has assembled almost all his scattered publications of the

last few years—articles, reviews, lectures, and contributions to symposia. That the result is a coherent and highly readable discussion of major economic problems is a tribute to the author's skill in revising and arranging the original essays and to the continuity of his work.

Part I is a critique of the recent literature dealing with industrial fluctuations—single chapters on Keynes, Harrod, Hayek, and Major Douglas and a survey chapter which considers the views of numerous other writers. Part II—mainly a re-writing of Hansen's contributions to the "Columbia Report"—discusses consumer purchasing power and unemployment reserves. Part III comprises six essays on the international situation and, in the reviewer's opinion, is much the best part of the book. Part IV is concerned mainly with the recent (1937) recession.

While the author has produced something much better than a mere collection of essays, he has left for reviewers most of the difficulties which such collections present. The wide range of discussion precludes criticism or summary of his views on all the topics which he has covered. Competent students will rightly assume that Hansen has included no material which does not merit careful reading. His discussions of recent literature are and have been of great assistance to economists in the assimilation of new (or neglected) contributions to cycle theory.[1] His discussions of current issues in economic policy are unfailingly judicious and stimulating. Certainly, there are few economists who have exercised a more salutary influence upon professional and lay opinion or (so far as he has exercised any influence) upon governmental policy.

Recognizing the outstanding merit of Hansen's work, one may perhaps usefully devote a short review mainly to critical remarks which aim to put the worst construction upon certain aspects of his position. One purpose of these remarks, frankly, is that of goading Hansen into

[1] It must be noted that Hansen has grossly misrepresented (pp. 111 ff.) the views of the reviewer and of the so-called Chicago group on monetary policy. He classes us, along with Angell, as proponents of the fixed-quantity scheme and, by way of documentation, cites an article of mine (see n. 2 below) which is a complete disavowal of that scheme and an exposition of its crucial shortcomings. I cannot believe that Hansen has read this article with even ordinary care, for on other points as well his representation of my views is distressingly unfaithful. Incidentally, since Hansen has chided us for not mentioning Soddy as an earlier proponent of 100 per cent reserves, I must say that, while it is sometimes permissible to expound ideas without tracing out their historical antecedents, it is hardly appropriate, after one has brought up the matter in this instance, to stop with mention of Soddy!

a straightforward statement of his own views on the central questions of economic policy. As matters stand, he seems to have no position; or, if a position may be pieced together from his occasional categorical observations about actual policies and about other people's schemes, it is, for the reviewer, neither elegant nor commendable.

Hansen often seems to argue both that cycles are inevitable and that they constitute our major problem of policy; that they are salutary, if not indispensable, in a free-market economy and that they are likely to undermine our civilization; that they are attributable mainly to real causes (which the reader is invited to define as "causes" about which nothing can be done) and that reform schemes which would eliminate cycles would put the economy in a strait jacket. Capitalism, to survive at all, must be permitted its terrific binges; and depressions are the necessary means for assimilating the technical progress which initiates and is materialized in the orgies of booms.

Such paraphrasing, while not offered as a fair representation of the author's views, is intended to suggest that his arguments are in need of some internal discipline. The strange variety of considerations which he invokes in his critical attacks upon particular proposals for reform would, to say the least, prove greatly embarrassing if he tried to formulate straightforwardly a position of his own. The considerations are perhaps in every case significant and relevant; but the author appears never to have faced squarely the task of ordering his own values. No possible scheme of policy can meet all the tests with which Hansen belabors different proposals—not to mention major criteria which he has never invoked.

A main difficulty appears to arise from Hansen's failure to give adequate attention to the long-term aspects of the problem and, in particular, from his failure to see that a major objective of policy must be the minimizing of monetary uncertainty—the development of stable rules of monetary and fiscal practice which will afford a secure basis for monetary anticipations.[2] Perhaps his large advisory responsibilities have produced an undue preoccupation with immediate, short-term issues; or perhaps, by virtue of his intensive study of the literature, his own work only mirrors a pervasive error in emphasis or viewpoint. Certainly his writings are more valuable to persons with a consuming sense of responsibility about today and tomorrow than to those who would formulate the essentials of a good monetary constitution for a

[2] See the reviewer's article, "Rules versus Authorities in Monetary Policy," *Journal of Political Economy*, XLIV (February, 1936), 1–30.

democratic, free-enterprise system. Hansen's interest is mainly an interest in good monetary management, in the bad sense of that phrase. His conception of the good arrangements appears to call merely for a series of governmental actions dictated by the *ad hoc* recommendations of economists like himself. If we must have such a monetary "system," the reviewer would prefer that it be managed by Hansen and others with whom Hansen has been closely associated in his advisory activities; but, if this is the best we can hope for, the outlook is dark indeed.

If there is point in these comments, they may also indicate a source of weakness in the author's theoretical discussions. It is pardonable, of course, for him to discuss the analyses of other writers within such frameworks as they happen to have used themselves—i.e., often without any framework which permits of analysis. His critical chapters, however, leave the impression of a strange and unanalyzed mixture of institutional economics and conventional theory. If Hansen were frankly an institutionalist, he might maintain that we can understand and describe how institutions work without knowing what they are. This view fits well enough with the fatalistic, "inevitableness" strain in his writings. But Hansen is fundamentally concerned about policy; and his theoretical discussions purport to follow the conventional methods of analytical inquiry. Consequently, his monetary theory, like that of Mr. Keynes,[3] may not unjustly be characterized as theory which attains to magnificent generality by being about nothing at all.

We might talk sense in monetary theory by positing various definite monetary arrangements and then seeking to determine how each would operate in an economy otherwise defined, at least implicitly, by fairly definite assumptions. If our prominent writers insist that they are merely seeking to indicate, in their theoretical propositions, how things work out under the existing monetary, banking, and fiscal system, one must ask them to tell us what that "system" is—to tell us by what assumptions it (or its essential features) can be characterized for purposes of analytical inquiry. It may be proper enough for some people (statisticians and historians) to inquire how it works without knowing or asking what it is—but not for persons who wish to be regarded as theorists in the conventional sense.

So, it may be suggested that Hansen and other distinguished economists need to face squarely the task of formulating their conceptions of a good monetary constitution, both for the discipline which

[3] See a review of Keynes, by the present reviewer, in the *Christian Century*, July 22, 1936.

such formulation would enforce upon their immediate, practical judgments and upon their tactics in controversy, and for the purpose of providing themselves with something to theorize about. If we are to have theoretical inquiry—and we need more, not less—it may as well examine the functioning of good monetary systems as of bad ones. Without definable systems of some kind there can be no meaningful theory.

HENRY C. SIMONS

University of Chicago

The Theory of Investment Value. By JOHN BURR WILLIAMS. Cambridge: Harvard University Press, 1938. Pp. xxiii+613. $5.00.

One of the disastrous consequences of the New Era madness in Wall Street has been the disappearance of the former clean-cut distinctions between investment and speculation in common stocks. Old-time investment, with its emphasis on book value and the past record, was shortsighted and naïve, but it possessed the supreme virtue of moderation. Present-day "investment," as practiced by investment trusts and everyone else, is not much more than an undisciplined wagering upon the future and as such logically indistinguishable from speculation. We are badly in need of a technique of common-stock investment which will be at once forward-looking and quantitatively restrained.

Mr. Williams' book seeks to give us just this—and more, because it deals also with bond investment. As applied to stocks, the underlying idea is simple enough. The investment value of a stock is the present worth of all future dividends. If we can fairly estimate these dividends and can select a suitable discount rate, the calculation of present value becomes merely a problem in higher algebra. A good part of the book is devoted to working out the formulas applicable to a variety of hypotheses, the treatment here being similar to, but far more elaborate than, the mathematical part of G. A. D. Preinreich's *The Nature of Dividends*. Many of these formulas are later employed in "case studies" to determine the investment value of General Motors, United States Steel, and Phoenix Insurance in 1937, and four public utility issues as of 1930. Mr. Williams gives us also an elaborate study of United States government bonds, aiming at a forecast of future interest rates and an appraisal of the outlook for inflation.

A vast amount of original thought, comprehensive research, and laborious mathematical study has gone into this impressive work. The task of evaluating it is no easy one, for it is crammed with new ideas,

critical judgments of the past, and both bold and tentative prediction. At the least we have here an interesting combination of economic and mathematical theory. The author claims much more for it—namely, that he has given investment analysts "the proper methods of evaluation" and of translating "prospects into prices" (p. 523), so that there is now no excuse for another excessive boom. But on this point there may be room for skepticism. If we examine the case studies critically we may find that the sound conclusions are not really dependent on the new technique, while the latter's distinctive results are either inconsequential or unconvincing.

The reviewer was especially interested in the study of Phoenix Insurance to see how Mr. Williams deals with the vexing problem of evaluating an expected long-term upward trend in earnings. The result was rather surprising. The value "assuming growth completed" was set at $105, by what amounts to the quite conventional method of multiplying expected normal earnings by 20. The method of discounting future growth (consuming seven pages and requiring much mathematics) added only $5.00 to this value, because in fine the author arbitrarily limited his consideration to a very minor net gain from an expansion lasting only a few years. The case study of American Telephone in 1930 yields even stranger results. Assuming an annual rate of growth of 10 per cent for ten years, the author finds an investment value of $200 per share. But had he assumed no growth at all and valued the 1929 earnings on the same basis as he used for the average earning power of Phoenix Insurance, the value of American Telephone would have been $20 \times \$14$, or $280.

Clearly, Mr. Williams' method stands or falls not on his formulas (which are unimpeachable) but on his assumptions with respect to their numerous variables—e.g., the rates of growth, of distribution of profits, and of interest; and the "terminal value" when growth ceases. One wonders whether there may not be too great a discrepancy between the necessarily hit-or-miss character of these assumptions and the highly refined mathematical treatment to which they are subjected.

A word must be added with respect to the elaborate study of factors affecting the future interest yield of government bonds. The reviewer cannot refrain from expressing strong disagreement with the reasoning which leads Mr. Williams to assert that common-stock prices should not reflect anticipated inflation, while bond yields should adjust themselves mathematically to expected future changes in the cost of living.

If this last were so, bonds could sell at a minus yield to discount a substantial fall in prices.

These criticisms, if justified, are serious. Nevertheless there remains much of solid value in the work. The case studies of United States Steel and Phoenix Insurance are models of thoroughgoing security and industry analysis. The emphasis on the primacy of dividends and the insistence that the value of reinvested earnings is to be found only in increased dividends sound a much-needed warning to Wall Streeters. In many other respects, too, Mr. Williams is to be commended for his conservative approach toward stock values. This conservatism is not really implicit in the author's formulas; but if the investor can be persuaded by higher algebra to take a sane attitude toward common-stock prices, the reviewer will cast a loud vote for higher algebra.

BENJAMIN GRAHAM

Columbia University

Confessions of an Economic Heretic. By J. A. HOBSON. New York: Macmillan Co., 1938. Pp. 217. $2.00.

J. A. Hobson has been guilty of two heresies and has lived to see both of them, if not incorporated into the body of orthodox doctrine, at least attain satisfactory respectability. One was his early conversion, in the late 1880's, to the theory of oversaving; the other was his lifelong endeavor to "humanize" economics from a colorless mechanistic "science" into a purposeful social economy. Starting back in the days when English economics was political economy still emasculated by the sentiment of laissez faire and hamstrung by stubborn belief in the immutability of its own "natural" laws, Hobson has lived to the time when economics is again political economy—this time free, and let us hope competent, to fulfil its purpose of forming policies of economic control and direction.

The present book is not a brilliant piece of writing, but it is informative and illuminating, as any frank intellectual autobiography should be. In this regard it takes place alongside Commons' *Myself* and Commons' forthcoming volume, *Investigational Economics*. It is, as Hobson remarks in his Preface, a restricted type of autobiography directed primarily to explaining the development of his economic—and, we may add, his political, social, and philosophical—thinking during half a century.

In early life profoundly influenced by the writings of John Ruskin and later by intimate contact with such men as L. T. Hobhouse and

Graham Wallas, Hobson has maintained through all his journalistic and free-lancing career a steadfast hold on the idea of a humanistic, purposive, welfare, economics. Because of his conversion to the doctrine of oversaving, he was early asked to discontinue his lectures for the Charity Organization Society, and to the same cause he attributes the failure of any English university to offer him a chair of economics. Only two of his books, his *Economics of Distribution* and his classic *Evolution of Modern Capitalism*, were given serious attention by the economic fraternity, and in the main he has had from the "scientific" economists—whether orthodox or Marxian—only the patronizing tolerance reserved for those able, well-meaning, but sentimental persons who have had the temerity to regard the economic system as a complex of instrumentalities for the accomplishment of certain fundamental ends subsumed in the general term "economic welfare." There are now, however, unmistakably clear indications that the impact of war and depression on economic and political institutions has forced many economists to a change of attitude. With the fate of capitalism as an economic instrumentality and of democracy as a political order hanging in the balance, it is impossible for anyone who does not dwell in a soundproof ivory tower to fail to sense the fact that economics is a science of means-ends relations, in the service of a political economy which is the art of controlling and directing the evolution of economic organization. Both in his philosophy of the nature and function of economics and in some of his specific ideals—such as oversaving and "human costs"—Hobson has been ahead of his time. But the times are catching up with him, and it may be hazarded that he will before long be regarded as one of the pioneers and founders of a modern, purposive, political, or social economy.

A. B. WOLFE

Ohio State University

The Cost Principle in Minimum Price Regulation. By HERBERT F. TAGGART. ("Michigan Business Studies," Vol. VIII, No. 3.) Ann Arbor: Bureau of Business Research, School of Business Administration, University of Michigan, 1938. Pp. vi+182. $1.00.

For his competence Professor Taggart was assigned to a year's servitude as chief of the Cost Accounting Unit, Division of Research and Planning, National Recovery Administration. In that post he had to review hurriedly the code methods for limiting minimum prices.

With great fortitude and charity he continued his study. In his *Minimum Prices under the NRA* (1936) he gave solid and sufficient evidence for concluding that all these methods were unsatisfactory. In the present volume he gives us, in fuller realistic detail, an analysis of the attempts to employ the cost principle as a regulatory device.

His writing, though valuable as a record of an episode in our national economic life, is also a well-buttressed forecast of the futility of state unfair practice acts that rely on the cost principle as a means of defining a crime. Several of these have been enacted; many others have been urged for passage.

His emphasis throughout is on the technical difficulties of the analysis. These are so great as to preclude clear statutory phrasing. Given a fair phrasing, one would still have to afford the dubious luxury of a criminal cost accounting to stay on the safe side of the law. The expense of operating an otherwise useless system of cost accounts might well exceed the business losses attributable to price-cutting by competitors.

Professor Taggart makes an adequate case. Hence it is not an adverse criticism to suggest that a stronger one could be made. Of a particular system of costing he remarks (p. 72): "The time required for each unit of product in each operation is ascertained and, with the wage rates known, it is easy to estimate labor cost." Keeping the question of determining a crime in mind, consider the case of two employers in a bad market year. One sustains his wage rates, sells at a loss, and bears the loss himself. His competitor cuts wage rates, sells at the same prices, and makes a profit. Which is the criminal? What of cost differences between lots due to accidental difference in time of dispatching? One may be worked on at "straight time" before five o'clock; the other, at "time and a half" after normal quitting time. In the reviewer's opinion the costing of labor and materials is less difficult than that of overhead only because, in the instance of the former, we conventionally evade and ignore the difficulties. There is a complete parallel in the analytic realities of so-called direct and indirect costs.

The author's note on the "Established Cost Survey" (Appen. C, p. 179) is especially to be commended to the notice of attorneys and legislators. A dollar's worth of proof for a nickel's worth of crime is the best that can be hoped for. The defendant's own accounts and records cannot be used in evidence against him. Someone else's estimates of others' costs are not the stuff by which crimes are proved beyond a reasonable doubt. In view of juries' willingness to indulge in offhand

legislation it should not be difficult to forecast verdicts or to predict the views of taxpayers who have to carry the cost of prosecutions.

JOHN B. CANNING

Stanford University

Les Fluctuations économiques et l'interdépendance des marchés. By B. CHAIT. Brussels: R. Louis, 1938. Pp. 344. Fr. 135.

Chait's book, dedicated to Ernest Solvay, is a discussion of the very important question of determining under what conditions economic activity may be expected to move in cycles of increasing amplitude and when it will approach stability. Being an engineer, he recognizes a problem in differential equations when he is confronted with one: he points out the necessity of supplementing the quantitative and what he calls the "historical or speculative" tools of research by the use of mathematical methods.

Professor Divisia's concept of an *ensemble renouvelé* is used in defining a market, which is taken to include an inflow and an outflow of goods and the stock resulting from their cumulative difference. Systems of markets are classified according to whether each market in a chain takes the entire or only the partial output of the preceding market and whether or not the output of the stages before the last consists of what might in other connections be considered finished products. For each type of system recurrence formulas are worked out which give the flow of goods into any market in terms of the flow into those corresponding to later stages of production or distribution. Some of the relations are tested statistically.

The recurrence formulas are used in a discussion of the effect on the level of production of the margin of profit, of the amount an entrepreneur increases his activities with each new unit of profit, and of speculation. The differential equations derived from various sets of hypotheses are solved, and conclusions are reached as to which sets of conditions make for stability.

The book is unfortunately marred by so large a number of typographical errors as to cause a reader an enormous amount of trouble in following the argument. Only a small proportion of the errata are listed on the errata sheet, which is itself not entirely free from errors. The use of notation is confusing, errors of calculation occur, the indexes are incomplete, and pages are devoted to argument in support of propositions that are almost self-evident. The use of data to test con-

clusions is not always skilful; the remarks on statistical methods are extremely misleading. In fact, M. Chait seems to be completely unaware that the only way the effects of chance can be distinguished from other contingencies is by the use of tests of significance, based on sampling distributions of appropriate statistics.

The distinctions drawn by M. Chait between different types of market systems seem artificial; at least, all types could be treated as special cases under one general formula. The functions he sets up are not convincingly shown to be the most realistic; in fact, the nature of the elements that belong in the equations would have to be determined by intensive study of data. Because of the various shortcomings of the book, it is likely that its conclusions will not find any general usefulness, but it is certain that M. Chait has set a good example by using a fruitful method in work on an important problem.

SUSANNE E. HOTELLING

New York City

The Crisis of Democracy. By WILLIAM E. RAPPARD. Chicago: University of Chicago Press, 1938. Pp. xiii+288. $2.50.

This timely volume contains a half-dozen lectures delivered in the summer of 1938 at the University of Chicago on the Harris Foundation. They relate particularly to the crisis of democracy in Europe, of which their author is a pre-eminently qualified observer. Professor at the University of Geneva, Director of the Graduate Institute of International Studies, official of the League of Nations from its beginnings, as well as a delegate to many sessions of the Assembly, Dr. Rappard possesses extraordinary competence for the analysis of contemporary European politics. These lectures set forth his latest reflections on the European political scene. For the American reader they offer not only the best informed but also the most sympathetic of recent commentaries on the current struggle for power abroad.

Rappard's observations did not lead him to despair of modern democracy. On the contrary, he concluded by questioning the solidity and longevity of modern dictatorship. But he was speaking before the Pact of Munich. It is a fair question whether the foundations of his faith in democracy seem as secure since the capitulation of the principal democratic powers under the duress of the two chief dictators' bellicosity. What, upon the Rappardian principles, is the outlook for

European democracy in the light of the conversations at Berchtesgaden and Godesberg?

The future of democracy, according to Rappard, depends in the first instance on the maintenance of peace, and on the organization of international relations such as will again allow national governments to strive primarily for the prosperity of their peoples and no longer oblige them to subordinate it to the security of their states. Since war did not actually break out over the ruins of the Czechoslovakian Republic, it may be technically correct to say that peace was maintained, but surely no one will contend that there are visible signs of improvement in the organization of international relations. On the contrary, the particular international institutions to which Rappard's hopes for the maintenance of peace have been chiefly attached emerged from the Czechoslovakian debacle weaker than ever before.

The second contingency upon which Rappard believes that the future of democracy largely depends is a workable solution of the problem of so organizing democratic government as to make it both popular and efficient. This, he thinks, can most likely be accomplished (1) by a return to greater freedom for private enterprise and (2) by strengthening the executives in democratic states without endangering the liberties of their peoples. It is evident that the intensification of the rearmaments race between the democracies and the dictatorships does not promise any progress toward the limitation of governmental functions in the former, but rather the contrary. A strengthening of the executive may be expected, but hardly greater security for popular liberties. As long as open warfare is averted, Rappard's hopes for democracy may survive, but with lowered vitality.

His real case rests less upon the strength of democracy than upon the weakness of dictatorship. The dictators may continue to flourish, he concedes, while their luck lasts and their health continues good. But let them once meet with sharp reverses, whether resulting from economic depression at home or impaired prestige abroad, or become embroiled in a major war involving great and prolonged exertions on the part of their subjects, their future, he believes, would grow dark. These reflections may offer little comfort to democratic statesmen hard pressed by imminent difficulties. But to those who can take a longer view of the political scene they should make for greater fortitude during this deepening political depression.

A. N. Holcombe

Harvard University

The Brandeis Way: A Case Study in the Workings of Democracy. By ALPHEUS THOMAS MASON. Princeton: Princeton University Press, 1938. Pp. xi+336. $3.00.

This "case study" is an account of the launching of the system of savings-bank life insurance in Massachusetts, aimed to illustrate the role of leadership in democratic reform. The book might have been more compact and readable if Dr. Mason had been able to keep his admiration for Louis D. Brandeis somewhat more in the background; but this admiration is well justified by the part Brandeis took in the agitation. The care with which Brandeis planned his scheme in advance, the ingenuity with which he used materials at hand, the tact with which he made leadership in the agitation a joint enterprise, the persistence which he showed in overcoming successive barriers of legislative and public inertia, and the temperate tone of both program and agitation all bear the marks of greatness.

Since most economists are reformers at heart, this is exactly the sort of study in politics they will find valuable. But there is very little useful economics in the book; in fact, the author starts off by announcing that he is not writing economics and by giving references (p. 1, n. 1) to several economic discussions of savings-bank life insurance. This reluctance to enter on economic questions, in fact, has been carried so far as to affect the political interpretation; for it leaves open the issue whether the reform achieved its objects. Dr. Mason does show that the upward trend of industrial insurance rates was reversed in 1907 (pp. 246–50), and that insurance in force under the scheme rose year by year to nearly $140 million in 1937 (pp. 252–55). But he does not show how far savings-bank life insurance has relieved the workingman from the burdens of the industrial insurance system—which, after all, is the economic crux of the matter.

Reference to statistics of life insurance in Massachusetts shows that savings-bank life insurance has not displaced industrial insurance. At the end of 1936, $1,155 million (face value) of industrial insurance was outstanding in Massachusetts, against only $110 million of ordinary savings-bank insurance and $3,074 million of ordinary insurance with other insurers.[1] But savings-bank insurance has outgrown other forms in Massachusetts. From 1920 to 1929 the amount of ordinary savings-

[1] Massachusetts, *Annual Report of Commissioner of Insurance*, 1936, Part II, pp. 46–47. Savings banks also carried $12 million of group insurance, other insurers $352 million. The gap in number of policies was still wider: savings banks, 120,534, other ordinary, 1,351,549; industrial, 4,721,159.

bank insurance in force increased 546 per cent, the amount of ordinary insurance with other insurers 197 per cent, and industrial insurance 117 per cent; while from 1929 to 1936 ordinary savings-bank insurance rose by 99 per cent of 1929, other ordinary insurance fell 23 per cent, and industrial insurance showed a net growth of 2 per cent.[2]

Savings-bank insurance is apparently used largely by higher income groups than industrial insurance, for the average policy of the savings banks in 1936 was $912 (the maximum issued being $1,000) as against $245 for the average industrial policy in Massachusetts and $2,272 for the average ordinary policy. But a study of the occupational distribution of savings-bank policyholders has shown that at least 50 per cent by number—perhaps over 75 per cent—are of the working class.[3] Part of the difference must arise from the fact that savings banks do not insure against the death of children under 10 years,[4] whereas much of industrial business is on such risks. Savings-bank insurance has fulfilled the predictions of much lower cost to policyholders than other insurers could offer, and of a much lower lapse rate.[5] The upshot is that the reform is a substantial, though perhaps not dazzling, success in operation.

ALBERT GAILORD HART

University of Chicago

Business Enterprise in the American Revolutionary Era. By ROBERT A. EAST. ("Studies in History, Economics and Public Law," No. 439.) New York: Columbia University Press, 1938. Pp. 387. $4.25.

This study seeks to portray the developments taking place between the outbreak of the Revolution and 1792 which explain the origins of corporate and other big business enterprise that began to assume prominence at this period. A brief survey of the situation just before the Revolution and of the general economic conditions during the Revolution is followed by a detailed study of the business activities of various groups and individuals in the region from Massachusetts to Virginia

[2] *Ibid.*, and E. Berman, *Massachusetts System of Savings-Bank Life Insurance* (Bulletin 615 of the U.S. Bureau of Labor Statistics [Washington, 1935]), p. 10.

[3] Berman, *op. cit.*, pp. 68–70. [4] *Ibid.*, pp. 13–14.

[5] *Ibid.*, pp. 38–41, 44 ff. The Massachusetts insurance report already cited shows (p. 56) that savings-bank policyholders whose policies were terminated in 1936 by surrender or lapse recovered nearly 99.5 per cent of the reserve. For ordinary policyholders of other insurers in companies operating in Massachusetts the corresponding percentage was 94.4; for industrial policyholders, 88.7.

during the years 1775–82, and leads up to an account of some of the resulting developments during the period 1783–92, which is called the "years of consolidation and expansion."

The results of the author's widespread and painstaking search through a mass of unpublished material, to which he gave especial attention—though extensive use was also made of printed sources—constitute the chief contribution of the study and should prove valuable to those who subsequently have occasion to delve into the relatively neglected economic history of this period. We have in consequence in the section dealing with the war years, which constitutes about two-thirds of the volume, an account of innumerable business transactions carried on by a large group of individuals, among whom James Wadsworth, Robert Morris, Philip Schuyler, William Duer, and their associates receive particular attention, while family relationships are carefully noted. The transactions described cover a wide range of activities—foreign trade, privateering, marine insurance, currency, foreign exchange, and land speculation, but those concerned with military supplies are most prominent. In many cases the details of transactions noted seem to have little or no significance as related to the author's search for the origins of big business, though they are valuable as throwing light upon economic conditions during the war and the problem of getting military supplies. The multiplicity of this detail is such that the reader is likely to lose sight of the forest because of the trees. One does eventually emerge, however, with some vision of the forest, though one which is rather impressionistic in character; perhaps inevitably so, since the general changes in the economic life illustrated by these details cannot be measured and have to be sensed.

Most important among the impressions obtained are those of the widespread speculative spirit engendered during the war, the great shifts in the distribution of wealth, the luxurious expenditure of the newly rich, the large-scale operations necessary for gathering war supplies, the growing importance of interstate transactions and of the groups engaged in such, with the resulting tendency to break down the provincial barriers of Colonial times. Note should be made of the author's conclusion that the dispersion of loyalist wealth has been exaggerated, and of the eminently sound point that the movement to secure the Constitution was not simply a reactionary and defensive move to protect property but also an aggressive move to secure a government better adapted to promote various business activities. In fact, it may be called a progressive move in the sense that a more

powerful centralized government was essential, both as an aid to business and as a regulator of business—though the latter was little stressed at the time—in view of the nationalizing trends in the development of the economic order which the future was destined to bring forth. For the period 1783–92 the author is able to present more concrete and better measurable results in the rise of new banking institutions and the growth of incorporated companies, to which especial attention is given.

While the author agrees that the foundations of the changes described had been laid in Colonial days, a more detailed account of some of the commercial and land speculative enterprises of that period might show that the developments of the Revolutionary period were not quite so striking or novel as one might infer from this study. Nonetheless, the mass of material here presented does make it clear that the Revolutionary conditions gave a decided impetus to large-scale business enterprise.

CHESTER W. WRIGHT

University of Chicago

The Tobacco Kingdom: Plantation, Market, and Factory in Virginia and North Carolina, 1800–1860. By JOSEPH CLARKE ROBERT. Durham: Duke University Press, 1938. Pp. xiii+286. $3.00.

This volume presents the story of the cultivation, marketing, and manufacture of tobacco in Virginia and North Carolina from 1800 to 1860. A brief introduction recalls the dominant part played by the "filthy weed" in shaping the life of Colonial Virginia and in directing the course of British taxation. The failure of laws passed to regulate quality and quantity and the part which debts contracted in tobacco planting played in the Revolution are also stressed as background for the later period in which historians have generally supposed production heavily declined. With this point of view Mr. Roberts takes sharp issue. He finds that after 1800 the centers of production moved south and west into the Virginia and North Carolina Piedmont, that tobacco became primarily a farm crop combined with general farming, that methods were altered and new kinds of tobacco grown, but that production kept up and soon surpassed old levels. Scholars have failed to note the increase in size of hogsheads by some two hundred pounds and have, as a result thereof, underestimated shipments.

The development of railroads after 1830 centered markets in Rich-

mond, Petersburg, and Lynchburg and permitted the development of the auction-sale warehouse, the commission merchant, and the tobacco exchange in succession. These towns also became the important centers for export and for manufacturing. In spite of heavy western competition in cheaper grades, Virginia and North Carolina made steady progress along all lines of tobacco raising and processing. After 1840, especially, the planters and manufacturers were prosperous. The panic of 1857 brought a temporary decline and played a part in joining the interests of these groups to the lower South, because of the part which Northern commission men played in losses suffered.

Mr. Robert's study of labor in tobacco factories is a valuable contribution toward a better understanding of what economic maturity might have done to the institution of slavery. Negro slaves in tobacco factories selected their own hire, found their own board and lodging with money provided, and received cash bonuses for all production beyond a fixed level. They often worked alongside free Negroes and accumulated property well beyond earlier slave limits. The contrast with slavery in Louisiana or Mississippi at this time is as great as that between any other tidewater and frontier institution.

This is a complete and well-worked out study of one of the most important factors in the life of the ante-bellum South.

AVERY CRAVEN

University of Chicago

March of the Iron Men: A Social History of Union through Invention. By ROGER BURLINGAME. New York: Charles Scribner's Sons, 1938. Pp. xvi+500. $3.75.

As a narrative of economic and social development the *March of the Iron Men* is vivid and interesting. The primary narrative begins with the early Colonial period and continues through the Civil War. We are given a substantial description of the Colonial house and its equipment as a background for the record of American invention. The influence of frontier problems upon the inventors is sketched with skill and related to the outstanding events in political history. There is a full history of the rifled musket in Germany and in the Colonies, with explicit reference to the marksmanship and tactics of the American troops in the Revolution. We then come to a brief sketch of the development of industry with primary emphasis upon Oliver Evans and Samuel Slater. This serves as an introduction to a history of the cotton gin, the ap-

plications of steam to transport, the development of agricultural implements through the McCormick reaper, and the technique of quantity production of interchangeable parts. The foundations were laid for a vigorous and highly characteristic type of industrialism by the close of the fourth decade.

The book is designed to show that this new pattern of economic activity could be effectively realized only under a frankly recognized national government.

> The dynamic force of union was a technological force. . . . . It was not deliberately or consciously applied, but it could not be kept out. Thus, it became inevitable that the confederation which had been held together by political tolerance should now become a union through applied technological force. Without that force, no pressure of popular feeling and no intellectual effort in political science could have levelled the peculiar evenness of our continent-confederation [p. 385].

The general narrative does not support this thesis very effectively. The chapter on the telegraph is badly placed, as it is separated by four chapters on the individualist period from the chapters dealing with unity. Ships, revolvers, and sewing machines, interesting as they are, distract our attention at a critical point in the narrative. As they stand, these final chapters do not lead us to the conclusion that the author has in mind.

A sharper sense of climax might have been achieved by some rearrangement of the material, but the conclusions stated could not be supported by any documentation. Technological change certainly exerts an important influence upon social life and upon political organization, but it does not of "necessity" require specific solutions of social problems. Such a concept of "necessity" is essentially inconsistent with the concept of the process of innovation that runs through the whole text. The new forms of economic and social life could indeed be best developed in a smoothly functioning national area, but basic conditions did not require any specific solution of the political problem, and the best possible solution might not have been achieved. The "conclusions" are not really an indispensable part of the text. They appear in interspersed passages which might well be omitted altogether. They are *obiter dicta* which express motives and purposes that were clearly important to the author, but they distract the reader and raise questions which cannot be answered within the limits of such a volume.

ABBOTT PAYSON USHER

Harvard University

The Agricultural Revolution in Norfolk. By NAOMI RICHES. Chapel Hill: University of North Carolina Press, 1937. Pp. ix+194. $2.50.

The theme of this book is important. Norfolk was in the forefront and perhaps in the lead in the technical changes which transformed English agriculture; the eighteenth and early nineteenth centuries saw the end of the inclosure movement; and the forces which brought about the latter probably effected a decline in the number of occupying owners of land. Professor Riches treats of all these transformations but of the first more comprehensively and successfully than of the other two.

In describing the changes in agriculture she relies primarily upon such well-known eighteenth-century writers as Marshall, Kent, and Young; but she has read widely in pamphlet and periodical literature and has culled from manuscripts at Holkham, Harpenden, and Chicago. The outcome is a most satisfactory and interesting sketch. There is new emphasis, and there is some correction of accepted views. Jethro Tull thought that deep plowing alone would revolutionize agriculture and set no store by marling and the rotation of varied crops. Though Coke of Holkham popularized the latter reform, his great uncle had already in 1757 adopted it. Indeed, marling and the new crops—clover, alfalfa, and turnips—had been introduced from Holland in the seventeenth century, marling by 1661, the new crops by 1620, 1651, and 1669, respectively. The light Norfolk plow, operated by one man and two horses and plowing two acres a day, was in 1652 ascribed to the Dutch. There are tables showing the productivity and the prices of crops, profits and rents per acre, the size of farms (many very large). The wages and housing of laborers are touched upon.

Although the data are culled from many sources, they are largely already in print rather than from unexploited manuscripts. This characteristic is more serious when the subjects are inclosures and the decline of the small landholder. It would have been worth while to examine the text and maps of the many available Norfolk inclosure awards; for, however unsatisfactory they are, much could be gleaned about the survival of open fields and commons. Similarly, there is need of a study of the "Land Tax" returns, surviving from 1767. They tell us a good deal about the disappearance of the small holder (cf. *QJE*, XXIV, 293). Let us hope that Professor Riches will undertake these somewhat toilsome tasks and extend the scope of researches so admirably begun.

H. L. GRAY

Bryn Mawr College

CONGRÈS INTERNATIONAL DE LA POPULATION, I: *Théorie générale de la population;* II: *Démographie historique;* III: *Démographie statistique: études d'ensemble;* VI: *Démographie de la France d'outremer.* Paris: Hermann & Cie, 1938. 4 vols. Vol. I: 270; Vol. II: 104: Vol. III: 154; Vol. VI: 127.

The four volumes under review constitute one-half of the proceedings of the international population congress, held at Paris in the summer of 1937. Most of the sixty-three papers included run ten pages or less; all are in the French language or accompanied by French summaries. Each volume contains a list of contents but no list of tables and charts and no subject index. The four volumes of the proceedings yet to appear are devoted to special studies of migration, mortality, natality, qualitative population problems, and demographic evolution and its consequences.

The twenty-nine papers comprising Volume I are concerned primarily with vital statistical methodology and procedures. Among the subjects treated one or more times are: the logistic curve and its applicability; the methods of measurement developed by Volterra; population types and what they reveal; the comparative usefulness of the various methods employed to measure true natural increase (e.g., those of Lotka, Kuczynski); the derivability of age composition from indices of the natural movement of populations; indices of nuptiality; the uses of standardized birth-rates; the comparative value of different indices of mortality; the methods of measuring internal migration and population mobility. Mukerjee reasons that optimum density of population is determinable only in terms of ecology. Simon develops an index of the economic density of population. Delevsky examines inconclusively the possibilities of arresting depopulation. Bouthoul suggests that population growth may be subject to very long-run, cyclical movements.

Eleven historical papers comprise Volume II. Korherr describes the census of Würzburg in 1701 in one paper; and in a second contends that the civilizations of antiquity declined in consequence of quantitative and qualitative demographic decay—a decay arrestable, in his opinion, only through the establishment of a kind of totalitarian culture. May describes the demography of the slave and servile populations of the Antilles in the eighteenth and early nineteenth centuries and suggests that such a study may throw light upon population growth in antiquity. Ptoukha contributes papers on the demographic works of Graunt and Deparcieux. Walek-Czernecki estimates the population of late-Ptolemaic Egypt at 8–8½ millions, that of Roman Egypt at 8½–9

millions, that of Alexandria at 1.2–1.5 millions. Willcox estimates life expectancy at birth in the Roman Empire at less than 25 years. Ciccotti argues that the pro-marriage legislation of Augustus was enacted for moral, political, and fiscal reasons, and not primarily to stimulate population growth. Parenti describes three efforts to establish immigrant colonies in Tuscany in 1560, 1670, and 1739–43. Langlois discusses the factors which affected the early peopling of French Canada. Meynier presents a new estimate of the levies and losses of France in the wars of 1792–1815 and compares his results with figures for 1914–18.

Volume III consists of eleven demographical studies of limited areas. Winkler shows that in recent years rural immigration served to keep the population of Vienna intact, and that proletarian natality exceeded bourgeois natality in Vienna. Burton and Downing estimate that in the absence of heavy immigration the population of Australia will decline after 1980. Notestein and Thompson present interesting data for small segments of the Chinese population. De Porte shows that in New York State racial demographic differentials are decreasing and racial fusion is increasing. Mauve traces a century's demographic history of a French rural commune. Das presents material on differential fertility in India and indicates the need there of birth control and eugenics. Carr-Saunders and Walshaw describe Irish population movements; Halévy, Jewish demography in post-war Palestine; Sanders, the demography of the Netherlands. Roubakine argues, on the basis of Russian data, that a soviet type of economy is not subject to "capitalistic denatality."

Volume VI consists of twelve papers dealing with the demography, the public health, and the available vital statistical data of the French colonies.

The papers in the volumes under review, in particular those concerned with other than methodological subject matter, suffer in many instances from brevity and inadequate substantiation of the propositions being defended.

JOSEPH J. SPENGLER

Duke University

Modern Banking. By R. S. SAYERS. New York: Oxford University Press, 1938. Pp. xi+316. $4.25.

This volume goes some distance toward filling the gap long evident in English treatises on banking. Many books have been devoted

largely to description of the institutional setting and to historical aspects; others in recent years have been concerned with the deeper issues of monetary theory and have assumed an abstract and—in some cases—"transcendental" character. The present volume is designed to provide "an exposition of modern banking in light of current theory" and "a summary and restatement of ideas which are the subject of agreement among most economists." Without dodging difficult ideas, the writer succeeds in avoiding complex formulas and in maintaining touch with realities. A minimum of factual material is presented, and the discussion runs mainly in terms of the English banking system; passing reference, however, is made to other systems and an interesting chapter is devoted to "banking in new countries."

Once attention has been focused on bank money in the initial chapter, the author turns to the structure and functions of commercial and central banks. Subsequent chapters include a discussion of bank-rate theory, the foreign exchanges, the mechanics of the gold standard, and the British Exchange Equalization Account. In a later section, dealing with commercial bank assets and liabilities, the author presents a good discussion of the "liquidity" issue and analyzes deposits in Keynesian terms. Consideration is given to the relationship between banking policy and fiscal policy, and a final chapter characterizes the issues involved in the nationalization of banking.

Though the author follows Keynes's views (as expressed in the *Treatise on Money*) at a good many points, he is critical of certain conclusions. While favoring government and central bank action in the endeavor to offset cyclical fluctuations, he recognizes important limitations on control via the quantity of money and interest rates. He emphasizes, for instance, the misapplication of resources in the late 1920's and observes that "America was involved in a violently inflationary boom" (p. 266). He favors government spending in time of depression to reinforce cheap credit and expresses doubt as to the danger of inflation at such periods (pp. 280–82). He makes the significant observation that English commercial banks "are entirely passive in the trade cycle" (p. 236).

Probably the writer has not given enough emphasis to "rationing" devices in the London market. There is some question as to whether "other deposits" of the Bank of England should be included in the statistical measure of money. The reviewer is disposed to question also the English practice, which the writer adopts, of defining money "as a medium of debts." Though it is possible to set up a time scale for

all transactions, there is nonetheless a real difference between current and deferred payments. Legal tender power is relevant to the latter, and when changes of standard occur, in consequence of the breakdown of parity, the new standard normally establishes itself in the realm of debts where the terms have already been fixed; subsequently (in a logical sense) it becomes, largely for reasons of convenience, the standard of current transactions where prices are flexible. Changes of this sort are lost sight of under the definition which regards all transactions as the creation and liquidation of debts.

At several points the writer's comments on the American system involve minor errors of fact or emphasis. He states that commercial paper "is ordinarily not rediscountable at the Federal Reserve Bank" (p. 66), and he omits reference to the important practice of open-market dealings in acceptances by the Reserve banks in his discussion of this market (p. 67). Recent legislation has altered somewhat the disposition of Reserve bank profits (p. 82), and it should have been observed (p. 128) that gold certificates no longer enter into circulation in the United States.

LEONARD L. WATKINS

University of Michigan

Monetary Policies of the United States, 1932–1938. By JAMES DANIEL PARIS. New York: Columbia University Press, 1938. Pp. xiv+198. $2.75.

In this small volume Mr. Paris deals with the sequence of events affecting the principal constituents of the American monetary system during the momentous years 1932–38. He presents his material with great lucidity, making excellent though sparing use of charts where they are most helpful and illuminating. In addition the volume contains three useful chronologies of events relating to gold, to silver, and to other forms of currency and a series of well selected reprints of laws and other public documents relating to monetary policy.

The attitude with which the author approaches the gold policies of the Roosevelt administration is indicated by the title of his chapter on gold, "Deliberate Manipulation of the Gold Dollar." He describes the objectives of these policies as follows:

> The professed main reason for varying prices of gold and devaluing the gold dollar was "to restore commodity price levels" and upon "restoration of the level," to establish and maintain a dollar which will not change its

purchasing and debt-paying power during the succeeding generation. An added excuse was "to protect the foreign commerce of the United States against the adverse effects of depreciated foreign exchanges"

and reaches the broad conclusion that none of the objectives sought were accomplished, "at least through gold adjustment and readjustment."

A commendable feature of Mr. Paris' discussion is the way in which he brings out the extraordinary importance of Treasury regulations in determining the type of monetary standard adhered to by the United States. His description of the Treasury Regulations of October 12, 1936, as "the second suspension of the gold standard" is particularly apt. His treatment of the Tripartite Monetary Agreement and of exchange equalization funds, however, appears unnecessarily cursory and cavalier.

The chapter on "Doing Something for Silver" is an excellent analysis of that most extraordinary of monetary adventures and is one of the best of recent exposés of its fallacies and dangers.

Mr. Paris finds that recent American monetary policies have been in many ways self-contradictory and have raised difficult new problems, such as that of the great inflow of gold from abroad. He sees running through them a consistent tendency to make emergency measures permanent and to centralize control of monetary policies in the hands of government. He recommends a return to the international gold standard, retirement of greenbacks, and putting an end to the dilution of the currency by silver.

WILLIAM ADAMS BROWN, JR.

Brown University

The International Economic Position of Argentina. By VERNON LOVELL PHELPS. Philadelphia: University of Pennsylvania Press, 1938. Pp. xv+276. $3.00.

This study is an examination of Argentina's "relatively simple" agricultural economy, heavily dependent on foreign trade and imported capital. The first third of the book is devoted to an interpretation of the Argentine balance of international payments, 1914–35, as estimated by Carlos Tornquist (to 1932) and by the Argentine Central Bank.

Against this background the author surveys in considerable detail Argentina's foreign indebtedness, foreign trade, and international com-

mercial policy. The marked cyclical fluctuations in the value of Argentine exports have created transfer difficulties which, it is concluded, can be avoided if future capital imports are more largely in equities than in bonds. The very large importance of the United Kingdom as an export market serves to explain the favored position enjoyed by that country in Argentine commercial policy. Argentina has clung to a nondiscriminatory tariff policy; but, beginning with the Roca-Runciman agreement (1933), she has granted preferential exchange allocation to about a dozen countries. United States exporters, partially due to what the Argentines regard as an unfair sanitary embargo on meat, are at a consequent disadvantage.

As a whole the book is informing, useful, and competently written. The author is least successful in his analysis of the balance of international payments. The Tornquist balances have been rearranged so as to eliminate the residual item (always a questionable proceeding), and set up in a confusing one-column form. The term "balance of payments" in the tabular presentation is used to designate the balance of commodity and service items but in the text is applied to various combinations of items as well as to the entire statement of international transactions (see, e.g., pp. 29, 50, 52, 63, 76, 122). The "balance of payments" in this narrow sense is then said to be "covered by" changes in indebtedness and gold. Of course the causal sequence may just as likely be the reverse, as the author is at one point aware (p. 36 n.). This confusion is only partially removed by the analysis of the mechanism of adjustment (pp. 75–98), which concerns itself with the period 1929–35, and is almost entirely in terms of commodity-price and exchange-rate fluctuations.

FRANK A. SOUTHARD, JR.

Cornell University

International Economics. By P. T. ELLSWORTH. New York: Macmillan Co., 1938. Pp. xiii+529. $4.00.

It is the aim of this book "to provide upper-division students with the theoretical equipment necessary to an analytical understanding of the phenomena of international economic relations and of the policies of governments bearing on these relations."[1] The discussion is divided into two parts, one dealing with theory per se and the other with policy.

[1] Preface, p. vii.

The first half of Part I is devoted to a presentation and criticism of the classical theory of international trade and to an exposition of Ohlin's "general equilibrium theory." The second half is concerned with processes of adjustment to international disturbances. It discusses adjustments to variations in the rate of international investment, shifts in demand, and changes in conditions of supply, and contrasts adjustments under gold to those under paper-standard conditions. Part II on policy examines the case for protection and autarchy, describes the instruments of commercial policy, notes the effect of monopoly on international economic relations, and discusses the gold-standard–paper-standard issue. The book is entirely concerned with theoretical arguments and offers little history, either as background material or as evidence of verification.

Professor Ellsworth's manner of exposition is entirely orthodox. Novel methods such as those used by Harrod are not attempted. In outline the book is much like Haberler's *The Theory of International Trade*, but it follows the conventional practice of presenting first the theory of international trade and second the monetary mechanism of adjustment. Special features of the book are the extended discussion of adjustment processes and the analysis of the gold-standard–paper-standard issue.

Space permits only a few detailed comments. The book is to be commended for its recognition of the importance of short-term capital movements in adjustment processes. Likewise the classification of "earnings on investments" as a "service" item seems to be sound. On the other hand, the reviewer feels that too much emphasis is put on the importance of "secondary" inflation and deflation in the mechanism of adjustment. Again, the analysis of adjustments to changes in demand and supply conditions fails at times to note the possible effects of induced variations in the rate of international investments and in dividend payments. Teachers of undergraduate courses may possibly find that the discussion has been put on too high a level even for upper-division students. That, however, can be determined only by actual classroom use. In any case there is no question that Professor Ellsworth has written an excellent survey of the theoretical aspects of international trade and commercial policy—a book that could well be used in graduate as well as undergraduate courses.

ACHESON J. DUNCAN

Princeton University

Australia's National Interests and National Policy. By H. L. HARRIS. Victoria: Melbourne University Press, 1938. Pp. xi+155. 5*s*.

This book was written as the Australian National Preparatory Paper for the Second British Commonwealth Relations Conference held in Australia in September of this year. As the book was written primarily to provide factual information for the delegates to the Conference, it is rather less stimulating than if it had been written in support of the general theoretical point of view of the author. However, Mr. Harris has given the salient parts of Australia's political and economic set-up in a commendably short space.

A striking feature of the Australian economy, which is implicit though not sufficiently explicit in Mr. Harris' treatment, is its engaging simplicity. The value of exports—consisting almost entirely of primary products—accounts for more than a fifth of the entire national income, so that fluctuations of export income are of outstanding importance in their direct effect on changes of aggregate demand within Australia. But they have an almost equally important indirect effect. The monetary policy of Australia is to maintain a fixed parity with sterling, so that the balance of payments operates not on the exchange rate but as the principal variable factor in determining the liquidity of the Australian banking system and so on interest rates. In addition, wage-fixing machinery aims fairly successfully at maintaining stable real wages throughout the Commonwealth, which means that in general money wages move in the same direction as export prices. It is thus apparent that the value of exports, the value of home investment, and national income are closely united by fairly simple relationships. This simplicity of structure, combined with rapidly improving official statistics, makes Australia a happy hunting ground for economists interested in realistic studies of "output as a whole."

A second point of considerable interest that emerges from the book is the extraordinarily close relationship of Austrialia to Great Britain. This is best exemplified by an incident in 1936, when, with a hastily considered stroke of a ministerial pen, the Australian government took grave economic and political risks in the Pacific in the interests of the manufacturers of Lancashire. Mr. Harris is at most lukewarm in his enthusiasm, and one feels he restrained himself with difficulty from an eloquent appeal for a reorientation of the Australian point of view.

One could have wished for a more elaborate analysis of the Australian political situation. It would be interesting to know whether the Labor party's clamor for high protection is the most direct way to

secure its ultimate objectives and whether the conflicting interests of primary producers and industrialists will continue to be reconciled in the uneasy union that at present exists in federal politics.

A. SMITHIES

University of Michigan

Corporation Finance. By KENNETH FIELD. New York: Ronald Press Co., 1938. Pp. xvi+529. $4.00.

The author of *Corporation Finance* has succeeded in writing a highly commendable text for beginning courses in this field. The subject is developed in simple, clear, and direct English without the usual wordiness of financial texts. This enables the author to hold the book to moderate proportions.

Although the author is mindful of certain economic, legal, accounting, and investment principles, nevertheless the point of view that dominates the book throughout is that of management. In assuming this point of view the author has avoided undesirable digressions into these fields, while at the same time limiting himself to strictly managerial problems—neglecting, perhaps, certain questions of social welfare now commonly found in similar works. Matters of accounting, investment, and law are treated only in so far as they involve principles which condition financial principles themselves. There are helpful chapters in investment banking, depreciation, financial statements, and income and reserves. No important subject is omitted.

An unusually large portion of the book is devoted to holding companies and consolidations. Here especially, as also in the chapters dealing with financial theory, the author shows himself to be a sincere student of the subject while giving evidence of research and keen observation of current financial practices. Both the principles and illustrations have a freshness which is much sought for in textbooks. Especial mention should be made of the chapters on segregated risk, financing working capital, theory of issuing securities, and recapitalization. These are strong chapters dealing with theoretical matters which are too often slighted in similar works.

Although the book has many virtues, there are some distinct limitations. Legal principles, and perhaps even social conditions and ideals which limit the operations of financial management, might have received more attention. There is a notable absence of all historical and

statistical material which would have contributed much to the student's perspective. There is also a lack of utilization of the results of recent research of other students in the field. Footnotes and bibliographical citations are scanty while references at the end of each chapter are not always carefully selected. Although this is intended to be a formal text, some problem material would have contributed to its usefulness.

In summary it may be said that as an introductory text in the field of corporation finance the book probably has few, if any, equals.

J. E. KIRSHMAN

University of Nebraska

Preliminary Investigation into Measures of a National or International Character for Raising the Standard of Living. By N. F. HALL. Geneva: Economic Committee, League of Nations; New York: Columbia University Press, 1938. Pp. 91. $0.50.

This volume by Professor Hall is the result of a resolution of the Assembly of the League of Nations in 1937 to have a "preliminary investigation" made into measures for raising the standard of living, this to pave the way for later detailed study. For backward peoples (e.g., parts of Africa) and low-income agriculturalists (e.g., parts of east Poland) Professor Hall concludes that improved local roads, better communication, and consumer education along with stimulation of wants will aid in raising the standard of living.

For more progressive areas physioiogical and related studies must reveal defects in quality and quantity of plane of living, with due allowance for climatic and other variations. Fiscal and taxation policies typically ignore income elasticities of demand and cross-elasticities of demand, and thus these policies rest heavily on the people and bring problems to their governments. Emphasis is placed on cheapening transportation and alleviating tax burdens thereon. Cultural and institutional factors making for low-living levels, as opposed to the more commonly emphasized economic factors, are given considerable weight. Little consideration is given to restoration of full employment, although the author notes that many governmental policies and labor policies work in the opposite direction.

EMERSON P. SCHMIDT

University of Minnesota

L'Epargne en France, 1914–1934. By JEAN LESCURE. 2d rev. ed. Paris: Les Editions Domat-Montchrétien, F. Loviton & Cie, 1936. Pp. 198. Fr. 15.

Basing his opinions on the compilations of such statistical material as is readily available, Professor Lescure comes to the conclusion that the *fortune française* was restored by 1935 to where it was in 1914 and that its revenues even surpassed the 1914 level (p. 181). It is almost incredible that some of the comparisons between 1914 and 1935 omit reference to the depreciation of the currency and the rise of the price level which had taken place. No less surprising is the fact that the excellent French professor virtually ignores the existence of a crisis in France (in June, 1935!).

The statistical compilation is preceded by a short and superficial discourse on the theory of business cycles with reference to the role of savings and by a chapter on the reasons for the French ability to accumulate capital. As to business cycles, the author's discussion is brought as far "up to date" as 1910 or so, neglecting the literature, the problems, and the experience of the last thirty years. As to the French propensity to save, Professor Lescure refers to the low birth-rate and the wide distribution of wealth as reasons, but emphasizes that the main factor which makes for growth of savings is the fact that people save—which is, of course, true. Other chapters deal in a similarly cursory fashion with the use of funds by French savings institutions, the export of French capital, and the effects of currency depreciation on capital values.

MELCHIOR PALYI

University of Chicago

BOOKS RECEIVED

American Association of Collegiate Schools of Business. *Proceedings of the 20th Annual Meeting, 1938.* (Charles C. Fichtner, Sec.) (Fayetteville, Ark.: University of Arkansas.) Pp. 155.

Arneson, Ben A. *The Democratic Monarchies of Scandinavia.* (New York: D. Van Nostrand Co., Inc., 1939.) Pp. xii+244.

Ball, Carleton R. *Federal, State, and Local Administrative Relationships in Agriculture,* Vols. I and II. (Berkeley: University of California Press, 1938.) Pp. I: x+461; II: xi+677.

Barfod, Børge. *Local Economic Effects of a Large-Scale Industrial Undertaking.* (Copenhagen: Einar Munksgaard, 1938.) Pp. 74.

Beer, M. *Early British Economics: From the XIIIth to the Middle of the XVIIIth century.* (London: George Allen & Unwin, Ltd.; New York: Macmillan Co., 1938.) Pp. 250.

Bernonville, Léo Dugé de. *Initiation à l'analyse statistique.* (Paris: Librairie Générale de Droit et de Jurisprudence, 1939.) Pp. 232.

Blakey, Roy G., and Blakey, Gladys C. *Taxation in Minnesota: 1939 Supplement.* (Supplement to *Taxation in Minnesota* [1932].) (Minneapolis: University of Minnesota Press, 1939.) Pp. 32.

Clark, John Bates: A Memorial. (Privately printed [1938].) Pp. 40.

Dallas, C. Donald. *You and Your Money.* (3d ed., rev. and enlarged.) (New York: Prentice-Hall, Inc., 1939.) Pp. 85.

Davidson, Elizabeth H. *Child Labor Legislation in the Southern Textile States.* (Chapel Hill: University of North Carolina Press, 1939.) Pp. 302.

Davis, Joseph S. *On Agricultural Policy, 1926–1938.* (Stanford University: Food Research Institute, 1939.) Pp. viii+494.

Dietrich, Ethel B. *World Trade.* (New York: Henry Holt & Co., 1939.) Pp. vi+458.

Dobb, Maurice. *Political Economy and Capitalism.* (New York: International Publishers, 1939.) Pp. viii+ 360.

Dollard, John, and Others. *Frustration and Aggression.* (New Haven: Yale University Press, 1939.) Pp. viii+ 209.

Donaldson, Mac. H. *Labor Problems in the United States.* (New York: Longmans, Green & Co., 1939.) Pp. x+ 289.

Elmer, Manuel Conrad. *Social Research.* (New York: Prentice-Hall, Inc., 1939.) Pp. xvi+522.

Fosdick, Dorothy. *What Is Liberty? A Study in Political Theory.* (New York: Harper & Bros., 1939.) Pp. x+194.

Fossati, Eraldo (ed.). *Korporative Wirtschaftstheorie.* (Jena: Gustav Fischer, 1938.) Pp. x+126.

Frankel, S. Herbert. *Capital Investment in Africa: Its Course and Effects.* (New York: Oxford University Press, 1938.) Pp. xvi+487.

Garrigou-LaGrange, André. *Production agricole et économie rurale.* (Paris: Librairie Générale de Droit et de Jurisprudence, 1939.) Pp. 211.

Ginzberg, Eli. *The Illusion of Economic Stability.* (New York: Harper & Bros., 1939.) Pp. xi+275.

Gooch, R. K. *Manual of Government in the United States.* (New York: D. Van Nostrand Co., Inc., 1939.) Pp. xi+791.

Gooch, R. K. *Source Book on the Government of England.* (New York: D. Van Nostrand Co., Inc., 1939.) Pp. x+494.

Graziadei, Antonio. *Il Risparmio e l'interesse nella grande industria bancaria.* (Milan: Fratelli Bocca, 1939.) Pp. xi+314.

Grzesinski, Albert C. *Inside Germany.* (Trans. Alexander S. Lipschitz.) (New York: E. P. Dutton & Co., Inc., 1939.) Pp. 374.

Hacker, Louis M., and Kendrick, Benjamin B. *The United States since 1865.* (3d ed.) (New York: F. S. Crofts & Co., 1939.) Pp. xxiv+821.

Harwood, E. C. *Cause and Control of the Business Cycle.* (Cambridge: American Institute for Economic Research, 1939.) Pp. vii+224.

Haussmann, Fritz. *Konzerne und Kartelle im Zeichen der "Wirtschaftslenkung."* (Leipzig: Verlag für Recht und Gesellschaft A.-G., 1938.) Pp. vii+382.

Haussmann, Fritz. *Rechtsstaat und "Wirtschaftslenkung."* (Basel: Verlag für Recht und Gesellschaft A.-G., 1938.) Pp. vii+335.

Heichelheim, Fritz M. *Wirtschaftsgeschichte des Altertums: vom Paläolithikum bis zur Völkerwanderung der Germanen, Slaven und Araber*, Vols. I and II. (Leiden: A. W. Sijthoff's Uitgeversmaatschappij N.V., 1938.) Pp. I: xiii+859; II: 377.

Hempel, Edward Henry. *Industrial Political Economy: The Fundamentals.* (New York: Pitman Publishing Corporation, 1939.) Pp. xiv+454.

Henderson, W. O. *The Zollverein.* "Cambridge Studies in Economic History." (Cambridge: At the University Press; New York: Macmillan Co., 1939.) Pp. xi+375.

Hicks, J. R. *Value and Capital: An Inquiry into Some Fundamental Principles of Economic Theory.* (New York: Oxford University Press, 1939.) Pp. xi+331.

Hill, George W., and Smith, Ronald A. *Rural Relief Trends in Wisconsin: From 1934 to 1937.* (Madison: University of Wisconsin Press, 1939.) Pp. 57.

Humpert, Magdalene. *Bibliographie der Kameralwissenschaften.* "Kölner Bibliographische Arbeiten," Band I. (Köln: Balduin Pick, 1937.) Pp. xv+1184.

Hutchison, T. W. *The Significance and Basic Postulates of Economic Theory.* (New York: Macmillan Co., 1938.) Pp. x+192.

Innes, John W. *Class Fertility Trends in England and Wales, 1876–1934.* (Princeton: Princeton University Press, 1938.) Pp. xiii+152.

Institut de Droit Comparé de L'Université de Paris, Section de Finances Publiques. *Annales de finances publiques*, No. IV. (Paris: Recueil Sirey, 1938.) Pp. viii+209.

Institut International d'Agriculture. *International Bibliography of Agricultural Economics*, Vol. I (1938/1939). (Rome, 1938.) Pp. x+137.

Keir, D. L. *The Constitutional History of Modern Britain, 1485–1937.* (New York: D. Van Nostrand Co., Inc., 1938.) Pp. viii+568.

Kulp, C. A. *Social Insurance Coordination: An Analysis of German and British Organization; a Report Prepared for the Committee on Social Security.* (Washington: Committee on Social Security, Social Science Research Council, 1938.) Pp. xiv+333.

Laufenburger, Henry. *L'Intervention de l'état: En matière économique.* (Paris: Librairie Générale de Droit et de Jurisprudence, 1939.) Pp. 371.

Martin, Robert F. *National Income in the United States, 1799–1938.* "National Industrial Conference Board Studies," No. 241. (New York: National Industrial Conference Board, Inc., 1939.) Pp. xv+146.

Maynard, Harold H.; Weidler, Walter C.; and Beckman, Theodore N. *Principles of Marketing.* (3d ed.) (New York: Ronald Press Co., 1939.) Pp. xxi+700.

Mosca, Gaetano. *The Ruling Class.* (*Elementi di Scienza Politica.*) (Trans. Hannah D. Kahn; ed. and rev., with Introduction, Arthur Livingston.) (New York: McGraw-Hill Book Co., Inc., 1939.) Pp. xli+514.

Mossé, Robert. *L'Economie collectiviste.* (Paris: Librairie Générale de Droit et de Jurisprudence, 1939.) Pp. 210.

National Bureau of Economic Research, Conference on Research in National Income and Wealth. *Studies in Income and Wealth*, Vol. II. (New York, 1938.) Pp. xii+331+2 tables.

Nichols, Egbert Ray (ed.), assisted by William E. Roskam. *Pump-priming Theory of Government Spending.* "The Reference Shelf," Vol. XII, No. 5. (New York: H. W. Wilson Co., 1939.) Pp. 482.

Nogaro, Bertrand. *La Méthode de l'économie politique.* (Paris: Librairie Générale de Droit et de Jurisprudence, 1939.) Pp. vi+275.

Petersen, Erling. *Macro-dynamic Aspects of the Equation of Exchange.* (Oslo: I Kommisjon Hos Jacob Dybwad, 1938.) Pp. 116.

Pigors, Paul; McKenney, L. C.; and Armstrong, T. O. *Social Problems in Labor Relations: A Case Book.* (New York: McGraw-Hill Book Co., Inc., 1939.) Pp. xxiii+325.

Pool, A. G. *Wage Policy in Relation to Industrial Fluctuations.* (New York: Macmillan Co., 1938.) Pp. xiii+305.

Ricci, Umberto. *Tre economisti italiani: Pantaleoni-Pareto-Loria.* (Bari: Gius. Laterza & Figli, 1939.) Pp. 239.

Rice, Howard C. *Barthélemi Tardiveau: A French Trader in the West—Biographical Sketch, Including Letters from B. Tardiveau to St. John de Crèvecœur (1788–1789).* "Historical Documents," Institut Français de Washington, Cahier XI. (Baltimore: Johns Hopkins Press, 1938.) Pp. xi +90.

Rider, Paul R. *An Introduction to Modern Statistical Methods.* (New York: John Wiley & Sons, Inc., 1939.) Pp. ix+220.

Saliers, Earl A. *Depreciation: Principles and Applications.* (3d ed.) (New York: Ronald Press Co., 1939.) Pp. xi+482.

Schell, Erwin Haskell, and Gilmore, Frank Forster. *Manual for Executives and Foremen.* (New York: McGraw-Hill Book Co., Inc., 1939.) Pp. ix+185.

Schlesinger, Arthur Meier. *The New Deal in Action, 1933–1938.* (New York: Macmillan Co., 1939.) Pp. 69.

Senior, Nassau William. *An Outline of the Science of Political Economy.* (With Appendices.) (Facsimile reprint.) (New York: Farrar & Rinehart, Inc., 1939.) Pp. xii+249.

Stotz, Carl Louis, and Van Valkenburg, Samuel. *Workbook: Elements of Political Geography.* (Cartography by Norman A. Bouley.) (New York: Prentice-Hall, Inc., 1939.) Pp. vii+ 223.

Tannenbaum, Robert. *Cost under the Unfair Practices Acts.* "Studies in Business Administration," Vol. IX, No. 2. (Chicago: University of Chicago Press, 1939.) Pp. ix+65.

Thomson, Lesslie R. *The Canadian Railway Problem: Some Economic Aspects of Canadian Transportation and a Suggested Solution for the Railway Problem.* (Toronto: Macmillan Co. of Canada, Ltd., at St. Martin's House, 1938.) Pp. xiii+1080.

Thorp, Willard L. (ed.). *Economic Problems in a Changing World.* (New York: Farrar & Rinehart, Inc., 1939.) Pp. xviii+820.

Thorp, Willard L., and Others. *Questions Based on Economic Problems in a Changing World.* (New York: Farrar & Rinehart, Inc., 1939.) Pp. 38.

Treat, Payson J. *Diplomatic Relations between the United States and Japan, 1895–1905.* (Stanford University: Stanford University Press, 1938.) Pp. x+291.

Turner, Robert C. *Member-Bank Borrowing.* (Columbus: Ohio State University, 1938.) Pp. xiv+243.

Urban, Jean. *L'Epithymologie: La Désirologie.* (Paris: Librairie Félix Alcan, 1939.) Pp. 359.

Valkenburg, Samuel Van. *Elements of Political Geography.* (Cartography by Franklin C. Erickson.) (New York: Prentice-Hall, Inc., 1939.) Pp. xix+401.

Watkins, Leonard L. *Commercial Banking Reform in the United States.* "Michigan Business Studies," Vol. VIII, No. 5. (Ann Arbor: Bureau of Business Research, School of Business Administration, University of Michigan, 1938.) Pp. 133.

Welfling, Weldon. *Savings Banking in New York State: A Study of Changes in Savings Bank Practice and Policy Occasioned by Important Economic Changes.* (Durham: Duke University Press, 1939.) Pp. xiv+205.

Welk, William G. *Fascist Economic Policy: An Analysis of Italy's Economic Experiment.* "Harvard Economic Studies," Vol. LXII. (Cambridge: Harvard University Press, 1938.) Pp. xx+365.

3